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**VEGETABLE MATERIA MEDICA**

**OF THE**

**UNITED STATES:**

**OR,**

**MEDICAL BOTANY.**



THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 101

# VEGETABLE MATERIA MEDICA

OF THE

UNITED STATES;

OR

## MEDICAL BOTANY:

CONTAINING

A BOTANICAL, GENERAL, AND MEDICAL HISTORY, OF MEDICINAL  
PLANTS INDIGENOUS TO THE UNITED STATES.

ILLUSTRATED BY

COLOURED ENGRAVINGS,

MADE AFTER ORIGINAL DRAWINGS FROM NATURE, DONE BY THE AUTHOR.

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BY WILLIAM P. C. BARTON, M. D.

Surgeon in the Navy of the United States, and of the Hospital for Marines at the Navy-Yard, Philadelphia ;  
Fellow of the College of Physicians of Philadelphia ; Member of the American  
Philosophical Society ; President of the Phila-  
delphia Linnean Society ; and

**PROFESSOR OF BOTANY**  
*in the University of Pennsylvania.*

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VOLUME I.

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1817

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PHILADELPHIA :

PRINTED AND PUBLISHED BY M. CAREY & SON.

.....  
1817.

DISTRICT OF PENNSYLVANIA, TO WIT:

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\* L. S. \*  
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BE IT REMEMBERED, That on the twelfth day of August, in the forty-second year of the Independence of the United States of America, WILLIAM P. C. BARTON of the said District, hath deposited in this Office the title of a Book, the right whereof he claims as Author, in the follow ing words—to wit: Vegetable Materia Medica of the United States; or Medical Botany: containing a Botanical, General, and Medical History of Medicinal Plants, indigenous to the United States. Illustrated by Coloured Engravings, made after original drawings from nature, done by the Author. By William P. C. Barton, M. D. Surgeon in the Navy of the United States, and of the Hospital for Marines at the Navy Yard, Philadelphia; Fellow of the College of Physicians of Philadelphia; Member of the American Philosophical Society; President of the Philadelphia Linnean Society; and Professor of Botany in the University of Pennsylvania. Volume I. "In conformity to the act of the Congress of the United States, entitled, An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned."—And also to the Act, entitled, "An Act supplementary to an Act, entitled, "An Act for the encouragement of Learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies during the times therein mentioned," and extending the benefits thereof, to the Arts of designing, engraving, and etching historical and other prints."

D. CALDWELL, Clerk of the District of Pennsylvania.



TO

**JOHN SYNG DORSEY, M. D.**

MEMBER OF THE AMERICAN PHILOSOPHICAL SOCIETY; AND OF THE ROYAL DANISH MEDICAL SOCIETY AT COPENHAGEN: ONE OF THE SURGEONS OF THE PENNSYLVANIA HOSPITAL; ADJUNCT PROFESSOR OF SURGERY, AND PROFESSOR OF MATERIA MEDICA IN THE UNIVERSITY OF PENNSYLVANIA.

My dear Sir,

Permit me to inscribe to you the first Volume of this Work. To no one more properly could it be dedicated.

Should you be enabled to render it subservient to the interest of that branch of Medicine which it is your province to teach, I feel confident you will not withhold from it your patronage.

I avail myself of this opportunity to express for you, my high consideration and personal regard.

**WILLIAM P. C. BARTON.**

*August 12, 1817.*



## ADVERTISEMENT.

IN describing the plants enumerated and figured in this work, the following plan has been adopted :

The first line in large capitals, contains the systematic or botanical name of the plant ; the second line in smaller capitals, contains the common or most general English or vulgar name or names.

The English or vulgar names enumerated after, are those by which the plant is occasionally known, and recognized in different sections of our country ; and as these are sometimes quite local, they are merely noticed for general information.

The paragraph following these names, contains a reference to the works of different authors who have noticed the plant. Many have been omitted, because the author had not access to them, and some, because their works were not scientific.

The generic character follows, together with a reference of the plant to the natural system of Jussieu ; the natural order of Linnaeus's natural method ; and the class and order of the artificial system of this author.



Immediately in succession, the best specific character known, is given, with a reference to the author. The synonyms next follow, succeeded by a brief notice of the pharmaceutical preparation of the plant, its virtues, its effects, medical uses and dose.

The *descriptio uberior*, or full description, in Latin, is always supplied for this work by the author, or quoted from his manuscript copy of the Flora Philadelphica ;\* though in cases where a good one has already been given, it will be quoted, with a reference to the author, as in the case of that of *Chimaphila umbellata*.

The text in large type, begins with a general or familiar description of the plant, calculated for the generality of readers, who, with this and the plate, will be, it is hoped, at no loss to identify the plants described.

The chemical analysis, when any has been made, follows ; then a history of the medical properties ; after which the æconomical use or uses are noticed ; and the history completed by an explanation of the plates, and the dissections of the flowers and fructification contained in them.

\* This work will be published in about twelve months from this period.

# VEGETABLE MATERIA MEDICA

OF THE

## UNITED STATES.

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### PRELIMINARY OBSERVATIONS.

SINCE the writings of Cullen, Murray, and Woodville appeared in Europe, few authors of any celebrity have written on the *Materia Medica*. Consequently few discoveries were published, of any note, or which added any thing very important to the science; and thirty years ago the knowledge these authors communicated to the world, was not enriched by the addition of a single valuable medicine from North America. About the year 1786, a German physician, named Schœpf,\* visited our country, and employed himself in collecting materials for an American *Materia Medica*. It cannot be supposed that

\* Dr. Schœpf, of Erlangen, in Germany, was a botanist, who came to this country with the German troops during the revolutionary war.

in a country like ours, rich in the production of new and curious plants, domestic medicine would be neglected by the natives or inhabitants; or that the practitioner who might think proper to employ indigenous medicinal plants in his practice, would stand in need of useful remedies. Accordingly we find, that not only the Indians of our country, and the European inhabitants who emigrated hither, but the farmers who were scattered over its extensive territory, had long been in the habit of curing the common diseases incidental to their state of life, by means of indigenous vicinal plants. Many of the vegetables thus employed had considerable reputation. It is not unlikely that some were undeservedly praised, while it would be unreasonable to suppose that all of those which had acquired repute, were undeserving attention. Dr. Schœpf, however, set himself assiduously to investigate all such plants as were reputed to possess medicinal powers; and, satisfying himself, by ocular proof, of the real species in question, he was enabled, by ascertaining their botanical characters and history, to present us with some certain facts for future experiment. In 1787, he published the result of his labours in a small work, entitled *Materia Medica Americana potissimum Regni Vegetabilis*. This performance laid the foundation of all the information we now possess, concerning our native medicinal plants. Besides this work, a paper was published in the *Amœnitates Academicæ* (vol. iv. Dissertatio LXXII. p. 522.) entitled *Specificæ Canadensium*, in which Coelln, the author, enumerated and described some few indigenous medicinal plants. On the 21st of February, 1798, the late professor Barton read a paper before the Philadelphia



Medical Society, entitled "Collections for an Essay towards a Materia Medica of the United States." This paper contains a summary of all that had been done by those who preceded him, relative to our Materia Medica; and also an addition of several articles which, from information received by the author concerning their properties he deemed sufficiently important to be ranked among our native medicines. In the year 1804, the professor published a second part of the "Collections," containing many additional facts relative to the plants enumerated in the first part, and a brief notice of some other important vegetables of active properties. These "Collections" are carelessly thrown together; and it is to be regretted, without even sufficient method, to render them useful. In this state they have gone through three editions, making in the last an octavo of 120 pages. The plants enumerated, are spoken of merely by their names, and the work is destitute of any kind of description calculated to assist the country physician or botanist.

The travels of Lewis and Clarke led to high expectations in every branch of science. The observations and inquiries of these gentlemen, particularly the former, were directed, among other things, to the medicines and aliments of our Indians; and they have given a large portion of information of a very interesting nature on these points. Unfortunately however for science, this information is not communicated in such a way, as to enable the botanist, the physician, or the agriculturist, to draw very efficiently upon the extensive sources of knowledge they present. A want of accurate descriptions of mixed

cinal and alimentary plants, deprives us of half the value of their discoveries.

Except these publications, there has appeared but little on the *Materia Medica*, in the United States. In the American dispensatory published by professor Coxe, many of our medicinal vegetables are incorporated with the foreign articles of medicine. This valuable work has given considerable importance to the native plants enumerated in it ; besides which professor Barton added such as he esteemed most useful, to his edition of " Cullen's *Materia Medica*."

Dr. Thatcher's Dispensatory contains also an enumeration of some of our native medicines, but nothing more than those which stand in the works of Professrs. Barton and Coxe just mentioned ; and in the little *Pharmacopœia* published by the Massachusetts Medical Society, a few are noticed. In Professor Chapman's " Discourses on the Elements of Therapeutics and *Materia Medica*" now in the press, the prominent indigenous articles are, I understand, treated of ; and the same importance attached to them which that gentleman was accustomed to give in his Lectures on the *Materia Medica*, to all useful native medicines.

The University of Pennsylvania is annually filled by a numerous train of pupils, many of whom settle and practice physic in the wilds of our country. The author supposed that a work describing our own medicinal productions, emanating from the school whither

they resort, would be likely to disseminate a knowledge of the properties and uses of our native medicines, in those parts of our country where such knowledge is highly serviceable. From a close attention to our *Materia Medica*, and from some experiments he has recently made, he is convinced that not a few of our indigenous plants are sufficiently important, to be introduced into the daily practice of physicians. The well-known deterioration of many foreign medicines in common use, renders it still more desirable to supersede them by the general employment of native productions. Hitherto this has been impracticable, owing to the want of some certain means of particularizing those plants, the properties of which are most valuable. Good medicines have fallen into disrepute, from the resemblance of inert to active plants; and although there is always something in a plant which distinguishes it from every other vegetable, yet the discrepancy is occasionally so equivocal, that common observers are wholly unable to profit by it without a good drawing. This will not appear surprising, when it is remembered, that even botanists are sometimes perplexed with the close alliances in the habit and structure of plants.

The exposition of these circumstances is sufficient to shew the importance of presenting the public with a work containing a full description and history of the native medicinal plants which have been introduced by their names, and some few remarks on their properties, into the works already noticed; and to enable every one to identify the precise plants described, good coloured engravings of them are indispensable.



The author of the following pages has undertaken the task of drawing and describing all the important plants of a medicinal character, native to the United States, which are known ; and also of figuring and describing many never before noticed for medical properties. In all the drawings, many of which are already finished, the greatest accuracy will be studied ; and with a view to render the work as correct as possible, the author encounters the laborious task of colouring all the plates with his own hand. Since faithful colouring is nearly as important in a work of this nature, as correct drawings, he trusts that the usefulness of the undertaking will be enhanced by this part of his labour. In the history of the plants nothing will be omitted, which can render the work interesting.

Three years have been passed in collecting materials for this work. The author has already delivered three courses of public lectures to the medical students of the University of Pennsylvania, on the plants which will be described ; and he announced to the members of his class, in May 1816, his intention of publishing the system of Indigenous Vegetable Materia Medica, of which he now presents the first number.

As it is probable that country practitioners of medicine residing in different parts of the United States, are possessed of much useful information derived from experience, concerning our native medicines, the author earnestly solicits communications on this subject.



Due credit will always be given for any facts on good authority, communicated in this manner.

The Trustees of the University of Pennsylvania having recently purchased forty-two acres of rich and watered land, near to Philadelphia, for the establishment of a Botanic-Garden : physicians residing in the different parts of our country, who have it in their power, will contribute materially to this institution, by transmitting to the author, seeds or roots of such plants as they have found possessed of active medicinal virtues.

*Philadelphia, July 1, 1817.*







CHIMAPHILA UMBELLATA  
(Pipsissewa. Winter-green.)



## VEGETABLE MATERIA MEDICA.

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### CHIMAPHILA UMBELLATA.

#### PIPPSISSEWA....WINTER-GREEN.

Ground Holly—Rheumatism weed.—*Herbe de Paigne* by the Indians in Canada, and *L'Herbe a Pisser* by the Canadians.

CHIMAPHILA umbellata. Pur. Fl. Am. 1. p. 300. Mich. Fl. Boreali-Am. 1. p. 251. Bot. Mag. 897. Pluk. Mant. t. 349. f. 4. Shoepf. Mat. Med. Am. p. 68. Barton's Collections, &c. ed. 3d. vol. 2. p. 2, 31, 35, 48. Coxe's Am. Disp. p. 560. 2d ed. p. 530. Pers. Syn. Pl. vol. 1. p. 483. Barton's Prodromus, Fl. Phil. p. 50. Mitchell's Inaug. Dis. Willd. Sp. Pl. 2, p. 622. Muhlenberg. Cat. p. 44.

#### CHIMAPHILA.

CHIMAPHILA. Mich. Fl. Boreali-Am. vol. 1. p. 251. et Pur. Fl. Am. No. 364. Cal. 5-partitus. Pet. 5. Stigma sessile crassum, orbiculatum, germine immerso. Caps. 5-locularis, angulis dehiscens. Sub *Pyrola*.

Nat. Syst. Juss. *Ericæ* Classis IX. Ordo III.

PYROLA. T. L. \* *Pyrole*. Calix minimus 5-partitus. Corolla. 5-partita, quasi 5-petala connivens petalis basi latis. Stamina 10 non exserta. Stigma 5-crenulatum. Capsula 5-locularis 5-valvis. Suffrutices aut herbæ; folia alterna aut subverticillata, pleraque radicalia; flores bracteolati terminales, spicati aut rarius umbellati vel solitarii. Gen. Pl. de Juss. ed. 1789. p. 161.

Nat. Ord. Lin. *Bicornes*.

Classis, *Decandria*; Ord. *Monogynia*. Lin. syst. (Sect. Polypetalae *Regulares*.)

CHIMAPHILA umbellata: foliis cuneato-lanceolatis basi acutis serratis concoloribus, scapo corymbifero, filamentis glabris. Pursh. Fl. Am. Sep. 1. p. 300. 2l. Flowers in June and July.

## SYNONYMA.

*CHIMAPHILA* corymbosa. Pur. Fl. Am. Sep. 1. p. 300.

*Pyrola umbellata*. Michaux. Fl. Boreali-Am. 1. p. 251.

*P. umbellata*. Willd. Sp. Pl. 2. p. 622.

*P. pedunculis subumbellatis*. Fl. Suec. 333, 363. Gmel. Sib. 4. p. 129. n. 18. Pollich. pal. n. 398. Hoffm. Germ. 144. Roth. Germ. I. 151. II. 464.

*P. frutescens*, arbuti flore. Bauh. pin. 191.

*P. 3. fruticans*. Clus. pan. 507.

Houttuyn Lin. Pfl. Syst. 6. p. 505.

Doldentrages Wintergrün. Willd. (German.)

Habitat in Europæ, Asiæ, et Americæ Septentrionalis Sylvis.

## DESCRIPTIO UBERIOR.

Radix repens.—Caules subdecumbentes, lignosi, spithamæi. Folia aliquando verticillata, opposita vel sparsa, subsessilia, in petiolum decurrentia, cuneiformi-lanceolata, obtusa, argute serrata, superne lucida viridissima, inferne pallida virescentia. Pedunculi terminales, terni, quaterni sive quini. Flores formosi, majores quam in *pyrola rotundifolia*. Calix, perianthemum 5-partitum, exiguum. Petala 5, alba, apicem versus rubicunda. Filamenta 10, filiformia, brevia. Antheræ bicornes. Stigma capitatum, obtusum, magnum. Habitat in sylvis umbrosis Americæ Septentrionalis. Med. Chi. Tran. vol. 5. p. 357.

*CHIMAPHILA UMBELLATA* is a plant common to Europe and America, and is indigenous also to the south of Asia. This species belongs to a genus recently severed from *Pyrola*, by Mr. Pursh. The generic name he has given, is compounded of two Greek words expressive of one of the most common English appellations, *χειμα hyems*, and *φίλος amicus*. In justice to the celebrated author of the *Flora Boreali-Americana*, it is proper to remark, that Michaux long since hinted at the propriety of making a new genus of two of the species of *Pyrola*: "*P. maculata* et *umbellata*, forsan constituunt genus a *Pyrola* discrepans habitu, stigmate sessili et indiviso, antheris

breviter rostratis et foramine sub-bivalvi dehiscentibus.”\* Mr. Pursh therefore has done nothing more than establish the genus, taking for its characters those proposed by Michaux. Seeing no good reason for his change of the specific name, I have not thought proper to follow him further than by adopting the genus. In restoring the specific term of *umbellata*, which ought never to have been laid aside, I am supported by the best usage, in cases where it becomes expedient to impose a new generic name. Of the genus as it now stands, there are two species; the *C. maculata*, and *C. umbellata*; the latter is correctly figured in the plate. This plant is nearly allied in botanical affinities to the *uva ursi*; and we also find a corresponding analogy in its medicinal properties and effects. The root, which is perennial, is long, creeping, and of a yellowish colour, sending off radicles. When chewed, it imparts to the taste a degree of aromatic pungency, not disagreeable. When bruised, it has a strong unpleasant smell. The stems arise, often several together, from the root, which they nearly resemble in colour at their lower ends—the middle and upper portions are reddish or dingy rose-coloured. They vary in height from six to eight inches; and, though generally erect, are not unfrequently found semi-procumbent. The leaves have the appearance of being whorled: and in general there are two of these whorls on each stem. Sometimes the leaves are alternate, and irregularly situated. They are lanceolate and somewhat wedge-shaped, narrowed towards the base, deeply

\* *Flora Boreali-Americana* 1. p. 251.



sawed on their edges, of a thick coriaceous texture, and of a very shining sap-green colour. The calix is small, five parted, and persistent. The corolla consists of five roundish, concave and spreading petals, which are white, tinged with rose-colour; they exhale an odour remarkably agreeable and spicy. There are constantly ten stamens; the filaments of which are awl-shaped, and shorter than the petals. The anthers are purple, large and nodding, bifurcated, or two-horned upwards. The germ is globular, angular, of a green colour, and always covered with a viscid matter; the stigma is thick and sessile, and the style persistent. The seeds, which are numerous and chaffy, are enclosed in a roundish five-angled capsule, having the five cells gaping at the angles. The seed vessel is persistent through the winter, and is often found on the new plant while it is in flower. *C. umbellata* is found in great abundance in the pine forests and woods of our country, from Canada to Georgia. Pursh restricts its southern range to Virginia, in which he is incorrect; I have myself seen it in the neighbourhood of the dismal swamp in North Carolina, and sparingly in the vicinity of Norfolk, Virginia. Mr. Nuttall informs me he has observed it further south than this; and that he has seen it in Dr. Baldwin's Herbarium, from Flint river in Florida. It delights in a loose sandy soil, enriched by decayed leaves; and thrives most luxuriantly under the shade of trees. It is very abundant in Jersey along the course of the Delaware; but also common in almost all the woods near to the city of Philadelphia. It is in full flower in June.



## CHEMICAL ANALYSIS.

From the chemical analysis of this plant, made by Dr. John Mitchell,\* it appears that the decoction strikes a black colour with the sulphate of iron ; and that there is little or no difference in the quantity of astringency in the leaves, and in the stalks. The proportions of gum and resin contained in the plant, are, according to Dr. Mitchell's experiments, as follow : 1. Upon adding alcohol to half an ounce of the dried leaves and suffering the mixture to stand for twenty-four hours exposed to a moderate temperature, then filtering and evaporating to dryness, a residuum weighing eighty-six grains was obtained. By the addition of water to this residuum, nineteen grains of gum were procured. 2dly. Upon adding water to half an ounce of the powdered leaves, and letting the mixture remain quiescent for twenty-four hours, exposed to the same degree of heat as in the first experiment, and then filtering the infusion, and evaporating it to dryness : a residuum was obtained, weighing forty-eight grains. By the addition of alcohol, twenty-two grains of resin were procured from this remaining powder.

## MEDICAL PROPERTIES.

The plant is principally entitled to the attention of physicians, for its diuretic property ; for which it is now sought and used by

\* Inaugural Dissertation, Un. Penn. 1803.

many of the physicians of Great Britain.\* Dr. William Somerville of the English army, deputy inspector of military hospitals, has published the result of his trials of this plant, in the Medico-Chirurgical Transactions of London, Vol. 5. p. 340. It appears from this paper that Mr. Carter, a surgeon who had charge of the hospital at William Henry in Canada, had used a strong infusion of the plant in a case of ascites, with good effect. The patient had been taking digitalis, chrysals of tartar, and other diuretics, without any success. The diuretic effect of the infusion in this instance, was manifest and considerable. It induced Dr. Somerville to try the medicine in the case of sir James Craig, the governor of Canada, who laboured under general dropsy, and whose system was cachectic. He tells us that the benefit of the herb was not durable, though while it lasted, it was very considerable: that its effects upon the kidneys were perceptible in two days; and that the medicine also produced a decided effect on the stomach, increasing the appetite. Sir James was directed to begin by taking a strong infusion of the whole plant, in the quantity of a pint in twenty-four hours. The same patient took this plant, in various forms, with benefit. Dr. Somerville says that the patient for whom he had prescribed it, remarked, that an agreeable sensation was produced in the stomach soon after taking the medicine, followed in some instances by extraordinary increase of appetite; and he justly observes that this circumstance gives it a very great advantage over other diuretics,

\* A druggist in Philadelphia received a drawing and description of this plant from Dublin, and an order to send thither a large quantity.

none of which are agreeable to the stomach, and most of them very offensive to it. Sir Walter Farquhar, it appears from Dr. Somerville's paper, had also used the Pippissewa in the case of a lady labouring under ascites. In the detail of this case the diuretic effects are very striking. The urine seems generally to imbibe the colour of the infusion of the herb, which resembles the infusion of common green tea. Dr. Somerville says he has generally observed the good effects of the plant on the stomach, and that as far as his experience or information extended, no circumstance had occurred to forbid its use in any form, or to render it expedient to limit the dose. He further remarks, that, "the extract was prescribed in three hopeless cases of ascites accompanied with unequivocal marks of organic visceral derangement; the patients were private soldiers: in two instances the kidneys were stimulated powerfully, and in the third the patient complained of sickness at the stomach, and did not persevere in taking the medicine." He says the surgeon of the East York militia was cured of dropsical symptoms, by the extract of chimaphila. Dr. Marcet found "striking effects" from the plant which he tried at Guy's hospital, in doses of fifteen grains of the extract thrice a day. Dr. Satterley likewise corroborates the accounts of the diuretic effect of this vegetable, by two cases which came under his care; and I am happy to have it in my power to add, that since perusing Dr. Somerville's paper, I have prescribed the infusion of the plant in four cases at the Marines' hospital under my care at the navy-yard of this city. The strong infusion was given combined with flax-seed tea in two cases, and with treacle or molasses-and-water, in



the other two, to the extent of a pint in twenty-four hours. In all, the diuretic effects were evident; and in one, where strangury was produced in an old man, by a large blister which had been applied for an affection of the side, the good effects of the infusion were evident in the speedy evacuation of water. Dr. Somerville says that "an ounce of the dried plant including root, stalk, and leaves, cut small, and macerated twelve hours in two pints of cold water, then boiled till it yielded one pint of strained liquor, was found to act with greater energy than the infusion." Mr. Carter found that thirty-four pounds avoirdupois of the recent herb, yielded four pounds of extract. Of this extract Dr. Somerville says he gave five scruples in twenty-four hours. The extract may be given in pills, or dissolved in a small quantity of boiling water. It appears that the Hurons, and other Indian nations, are well acquainted with the effects of this plant upon the kidneys. They have long been in the habit, Dr. Somerville tells us, of using it "in all disorders which they ascribe to a diminished secretion of urine, and which they believe will be cured by an increase of that secretion. They use it in gravelly complaints very commonly. It is, indeed, said to be one of the principal articles of the *Materia-Medica* of the Indians; and in a paper by the late professor Barton, published in the 7th volume of the *Medico-Chirurgical Transactions* of London, he intimates that the knowledge the whites have of the use of this article in calculous affections, was derived primarily from the savages of our country. The professor says in the same paper, that, "all his trials and inquiries respecting this plant had convinced him that it is an important



antilithic, not less so than the uva ursi.” The tonic property belonging to this plant, noticed by Dr. Somerville, while it seems to enhance its value as a diuretic, has led to the use of the plant in intermittents and other similar affections. Dr. Mitchell relates some cases of its success in these fevers. In one of them the diuretic operation was noticed. The urine, which was considerably increased in quantity, was of a dark or black colour. This is an interesting fact, though inexplicable. Dr. Heberden has recorded a case of a similar colour being produced by the uva ursi. The Indians use a strong and warm decoction of the Pippissewa, in rheumatism and fever. Its use in the first disease has led to one of its English names, rheumatism-weed. They employ the whole plant, and the decoction is taken in large quantities. It is probable that the relief they find in this mode of employing the plant, is owing to the perspiration induced by it. Professor Barton says he has been “assured on good authority, that it was very extensively employed, and with excellent effect, in many cases of typhus fever, which, under the appellation of ‘camp-fever,’ prevailed among the American troops, and carried off great numbers of them, during the time of the revolutionary war.\* A decoction of the plant, he tells us, was used, and he was of opinion that it did good by exciting copious perspiration. Pippissewa is a topical stimulant,† and the bruised leaves are said sometimes to induce redness, vesication, and desquamation of the

\* Medico-Chirurgical Transactions, Vol. 7.

† Barton’s Collections towards an Essay on the Materia Medica—3d ed. part 2. p. 31.

skin. This effect of the plant, as it is remarked to occur but seldom, has been said by the author of the "Collections," not to be particularly worthy of attention; yet it seems to derive some more importance from an observation of Dr. Somerville, in the paper already quoted. He informs us, that "in a case of acute rheumatism, in Canada, he saw the leaves of a plant which he supposed to have been the *pyrola umbellata*, applied as a cataplasm to the shoulder affected: the bruised leaves of the recent plant held to the fire till they were as hot as they could be endured, were applied to the part in a warm towel, for three hours. The application produced great heat, irritation, and redness in the part, followed by such sharp pain, that profuse perspiration over the whole body ensued, which was kept up in bed by warm drinks and clothing, for six hours." Dr. Mitchell relates the case of a gentleman of Philadelphia, who used the *Pippsissewa* during an attack of rheumatism; the bruised leaves moistened with brandy, were laid on the affected part in the evening: the next morning complete vesication was produced, but the pain was not alleviated. A decoction in vinegar has been said to be useful as an application to bruises. It follows from these facts, that the plant may not be unworthy the attention of physicians, or at least that it may be serviceable in domestic medicine, as a topical stimulant.

It appears from the preceding observations, that the *Pippsissewa* is chiefly entitled to a place in the *Materia Medica*, by reason of its diuretic property. In justice, it must be observed, that we are indebted to the experiments and observations of Europeans, for the

discovery of this very general effect of the plant. And if future and more extensive trials of it in dropsical affections, should confirm the high character given to this plant by Dr. Somerville, we have much reason to congratulate ourselves on the accession to the *Materia Medica*, of so powerful a diuretic ; one, not only divested in its introduction to the stomach of any nauseating or other unpleasant consequences, like those of *digitalis* and *squill* ; but actually exerting a roborant effect upon that organ, manifestly increasing the appetite, and producing very agreeable feelings in the patient, soon after it is taken. Bearing in mind the good effects ascribed to *uva ursi*, in dropsy, by Dr. Ferriar, of Manchester, we may, from the facts now within our knowledge, together with the circumstance of the affinity of the plant to *uva ursi*, not hesitate to recommend the decoction of *Pippsissewa* as a valuable remedy in this disease, at least in conjunction with the use of the lancet. Its reputed efficacy in nephritic affections, if it does not rest on as broad a foundation as the diuretic virtue of the plant, should not be despised ; and as a topical stimulant it is worthy of further investigation, particularly as one species of the genus to which this plant lately belonged, *Pyrola rotundifolia*, has been said to be esteemed by the Indians for its blistering property.\* This plant is likewise used in many parts of the United States, in cancerous affections ; but it is entitled to no attention in such cases.† It is somewhat remarkable, that Mr.

\* Remarks on the bite of the rattle snake, by professor Barton, Trans. Am. Phil. Soc. Vol. 3. p. 103.

† I have been informed by Dr. Hewson, the professor of comparative anatomy, that upon showing the *C. umbellata* to Cæsar A. Rodney, Esq. of Delaware ; it was recognized as a plant known in that state by



Pursh\* has mistaken, in a medical point of view, the other species of *Chimaphila*, viz. *C. maculata*, for that which is the subject of the foregoing remarks ; and he has quoted the Indian name incorrectly, calling it *Sipissisewa* ; so far as I know, this appellation is never given. That in relation to the medicinal virtues he has confounded these two plants with each other, is evident, from his attributing active properties to *Chimaphila maculata*, which is not at this time known to possess any. He says he has himself been a witness of a successful cure made by a decoction of the plant, in a very severe case of hysteria ; and remarks, “ that it (the *C. maculata*) is a plant eminently deserving the attention of physicians.” I am inclined to think Mr. Pursh has been misled in this instance by the name of *Pippissisewa*, which is applied in common to both species ; for the experiments of Dr. Mitchell go to prove, that the species so highly commended by him is wholly inert, though it is worthy of remark, that the Indians are said to call this species *poison Pippissisewa*, in contradistinction to the *C. umbellata*, which they call simply, *Pippissisewa*. Besides this, Shœpf says of *C. maculata*, which he enumerates among his medicinal plants : “ *infusum foliorum, ante annos aliquot, sub nomine Pipsisseva, frequentissime ad Febres intermittentes, exhibeatur in Pennsylvania.*”†

the name of “King-cure ;” and he informed the doctor it was a popular remedy for scrofula. The fact is only mentioned here, with a view to give all the information on the subject I am possessed of. Certainly we are warranted, from our knowledge of the real virtues of the plant, to believe that its exhibition in this complaint, is strictly empirical.

\* *Flora America Septentrionalis.*

† *Mat. Med. Am.* p. 68.



Pursh is altogether silent respecting the medical properties of *C. umbellata* ; but after all, it is not unlikely that the *C. maculata* will turn out to be an active plant. It is not only very like the other in habit, but it may readily be confounded with it, on a slight view. It is most easily distinguished from the *C. umbellata*, by its leaves, which are of a dark olive green colour, and conspicuously maculated or veined with greenish-white ; while in the *Pippsissewa* which is the subject of this article, the leaves are of a shining green hue, without any spots or veins. In the *C. maculata*, too, the leaves which are lanceolate, inclining occasionally to ovate, are broad at their bases, and taper to their apices ; they are also deeply sawed on their edges. Those of the *C. umbellata* are narrowed at their bases, broadest towards their ends ; the serratures are not quite so deep, and are nearer together. It must be confessed, that the aspect of the *Chimaphila maculata* is strikingly indicative of active properties, and the plant is worthy of further investigation.

#### ECONOMICAL USE.

I have been informed by Judge Peters, that it is a common practice in the country, to give a bucket full of the decoction of the *C. umbellata*, to horses that are unable to stale, with the view, and uniformly with the effect, of relieving them. This is a strong fact in corroboration of the diuretic virtue of the plant, as described in the foregoing pages ; and it is also an interesting one to farmers, or other

persons who keep horses, and reside in the neighbourhood where the Pippissewa grows.

TABLE I.

Fig. 1. represents the *Chimaphila umbellata* of the natural size. Sometimes two stems supporting a corymbus or kind of umbel of flowers, proceed from the upper whorl of leaves; and not unfrequently the persistent capsules of the last year, supported on the dried stem, remain on the flowering plant.

Fig. 2. the persistent capsules, by which and the leaves, the plant may be recognized when out of flower.





SANGUINARIA CANADENSIS.  
(Blood-root. Puccoon.)



## SANGUINARIA CANADENSIS.

### BLOOD-ROOT....PUCCOON.

Indian-paint. Red-root. Turmeric.

SANGUINARIA Canadensis. Lin. sp. pl. 723. Amoen. acad. 4. 515. Gronov. virg. 57. ed. nov. 80. Cold. novebor.  
126. Corn. Canad. 212. Schœpf. Mat. Med. Amc. p. 85. Dill. elth. t. 252. Ait. Hort. Kew. ed. 2d. vol.  
3. p. 286. Pers. Syn. Plant. vol. 2. p. 61. Bot. Mag. 162. Mich. fl. Boreali-Am. 1. p. 309. Willd. sp. pl.  
Tom. 2. p. 1140. Coxe. Am. Dispen. ed. 2d. p. 549. Thatcher. Am. Dispen. ed. 2d. p. 331. ed. 1st.  
p. 201. Pharm. Mass. Med. Soc. p. 29. Downey's Inaug. Diss. Barton's " Collections," &c. ed.  
3. vol. i. p. 28, 55. Vol. ii. p. 39, 52. Muhl. Cat. Pl. Am. Sep. p. 51. Barton's Prod. fl. Philad. p. 57.

### SANGUINARIA.

Gen. Plant. ed. Schreb. n. 878.

SANGUINARIA Lin. *Cal.* 2-phyllus. *Pet.* 8. *Caps.* ovata, 1-locularis.

Nat. Syst. Juss. Papaveraceæ—*Classis* XIII. *Ordo* II.

SANGUINARIA L. \* BELTHARNOSIA, T. \* Petala 8. Stigma capitatum, bisulcum persistens. Capsula ovata  
oblonga, apice attenuato, bivalvis valvis replo biscapo utrinque seminefero persistenti, appositis  
caducis. *Folium unicum radicale; scapus 1-florus; succus hæmatodes.* Gen. Plan. de Juss. ed. 1789.  
p. 236.

Nat. ord. Linnæi, *Rhœdeæ.*

*Classis. Polyandria, Ordo. Monogynia, Lin. Syst.*

SANGUINARIA CANADENSIS: folio subreniformi sinuato-lobato, scapo unifloro. Willd. Sp. pl. 2. p. 1140 et  
Pur. 24.

Var.  $\beta$ . stenopetala; S. petalis linearibus. Pur. fl. Am. Sep. 2. p. 366.

## SYNONYMA, &amp;c.

SANGUINARIA. Hort. cliff. 202. Gron. virg. 57. Mill. Dict. n. 1. Giseck. ic. fasc. 1. n. 13.

S. minor, flore simplici. Dill. elth. 335. t. 252. f. 326.

Chelidonium majus Canadense acaulon. Corn. Canad. 212. Moris. hist. 2. p. 257. s. 3. t. 11. f. 1.

Raj. hist. 1887.

Ranunculus Virginiensis albus. Park. theat. 327. Rai. suppl. 314.

♂. Sanguinaria major, flore simplici. Dill. elth. 335. t. 252. f. 325.

γ. Sanguinaria major, flore pleno. Dill. elth. 335. t. 252. f. 326.

Houttuyn Lin. Ph. Syst. 7. p. 185.

Canadisches Blutkraut. Willd. (German.)

Habitat in America Septentrionali.

Folium radicale tenerrime in sinu foveat, et amplectitur infantiam floris, more Osmundæ Lunariæ et est folium unicum cucullatum et scapus uniflorus e singula gemma radice bivalvi. Stamina meae vix habuere *Antheras* polliniferas; an dioica? *Lactescens* succo fulvo Chelidonii. Willd. sp. pl. p. 1140.

Habitat in nemoribus Canadæ et Floridæ.

Pharm. Sanguinariæ Radix et semina.

Qual. Succus saturate aureus, acris corrodens. Flavo tingit; Spirit. Vini colore rubro grato inficit.

Vis: emetica, purgans.

Usus: Rad. decoct. tenue Gonorrhoea; morsura serpentum; morbi biliosi;—Succ. veruccae. icterus, rad. pulv. ʒ i. in cerevisia. Shoep. Mat. Med.

## DESCRIPTIO UBERIOR.

Planta pulcherrima. Radix præmorsa, fulva, magna et carnosa, succo fulvo exudans Chelidonii. Foliis radicalibus, sub floratione parvulis, subtus glaucis, sanguineo-venosis, circa scapum et florem convolutis. Post florationem folia sunt magna, cordata et profunde sinuato-labata, subtus glauca et fulvo-venosa. Scapo constanter uniflora. Florum petala alba vel roseo-striata, perquam varians numero et magnitudine; frequenter 8. calix evanescens sive caducus. Capsula longa in medio inflata, apice et basi attenuata. Semina plurima rotunda et acuminata. ʒ. Florens Martio et Aprili.

Barton's Flora Philadelphica, M.S.

SANGUINARIA CANADENSIS is a plant peculiar to North America. Its systematic name, as well as its English and German appellations, are expressive of the peculiar reddish, or rather orange-coloured juice which pervades every part of it. It is one of the

most beautiful and delicate vegetables of our country. It is particularly interesting from its flowering at a season when there is little or no general verdure, and scarcely any thing in bloom, except trees, the inconspicuous florescence of which does not render them in general very attractive. It is also one of the most abundant plants of our states, growing plentifully from Canada to Florida.

The root of Puccoon is perennial, and of no definite size. It varies in thickness from a quarter, to a half, or sometimes three quarters of an inch in diameter; and in length, from two to four inches. It is generally about the size and length of a finger; fleshy, round, and abruptly terminated; being for the most part tolerably straight in the middle, with a curvature at each end. It is commonly of the shape represented in the plate, though not unfrequently, particularly in the new plant, shorter, and contorted or bent upwards. Occasionally a number of roots are connected together, principally by no closer attachment than that produced by a fasciculation of the numerous fibres originating from the main body. The external colour of the root is brownish, inclining to copper; but being cut, it appears of a red hue, and a bright orange-coloured juice is abundantly discharged. The end always has the appearance of having been cut off by a dull instrument, or broken in removing it from the ground. The scape, which is uniformly terminated by a single flower, proceeds from one end of the root, and rises perpendicularly to the height of six or eight inches. In the early part of the season, that is, about the last of March or first of April, it flowers much under this height; and not unfrequently the flowers are ex-



panded at these periods, when the scape has just appeared above ground. The leaf-stalks, which are thicker than the scape, are long, and arise from the same part of the root. This has relation to a plant in the state of forwardness represented in the plate. In common, by the time the flower is expanded, the leaf-stalk is not more than half the length of the scape ; and it then supports a small convoluted leaf, with its lower lobes embracing this part. Both the leaf-stalks and scape, which are encircled at their origin from the root, by a common sheath, are of an orange colour, deepest towards their junction with the caudex, and becoming paler near to the leaves and flowers, where it is blended with green. When broken or squeezed, they emit a coloured liquor, like that of the root, but paler. The stain made by this fluid on paper, is a faint yellow. When this plant first comes up, the young leaf is rolled round both scape and flower-bud ; and not unfrequently, the flower is opened immediately over the convoluted leaf. The under side of this leaf is glaucous, the disk pale yellowish green, and on both sides the orange-coloured veins are very conspicuous. In favourable situations the plant has often one or two expanded leaves like that in the plate ; and these are also of a pale green colour on their upper surface, and glaucous or bluish-white underneath, interspersed on either side with numerous orange-coloured veins. The whole plant becomes much increased in size after the flowering is passed about a month ; frequently attaining at this period, the height of fifteen inches, but commonly not exceeding twelve. The leaves are then enlarged to twice or thrice the size of that in the plate, are heart-



shaped, and deeply lobed. The number of lobes is mostly five or seven, and their edges have many small unequal indentations. On each lobe, one large fibre of a bright yellow colour may be seen, running from the leaf-stalk and sending off many smaller ones. The flowers are white and spreading; and have two deciduous calix leaves. Michaux says there are three, which I believe is an error. The calix is so exceedingly fugacious, that it is common for them to fall off before the flower is expanded; hence they are rarely seen. The petals, which for the most part are pure white, are often tinged on their under side, and sometimes on their upper, with a delicate rose colour. The flower-bud is generally faint rose-coloured. The petals vary exceedingly both in size and number. I have in many flowers counted from seven to fourteen; the common number is about eight. The stamens are numerous, the anthers simple, and orange-coloured. The filaments are simple, shorter than the cololla, and of a yellow colour. The pistil is reddish green; the germ oblong and compressed. Style none. Stigma thick, two furrowed, with a stria the height of the stamens, and permanent. The capsule, or as Willdenow designates it, the siliqua, is oblong, swelling in the middle, acute at both ends, and two-valved. The seeds are numerous, round, and pointed.

The variety described by Mr. Pursh as having linear petals, I have never seen. Mr. Nuttall informed me, that it was also collected in Georgia by Mr. Lyon. The medicinal properties are in all probability the same, as the variety does not differ except in the flower.

The tendency of Puccoon to multiply its petals in favourable situations, renders it likely that culture would readily produce a double variety; and indeed the variety marked *v. Sanguinaria major flore pleno*, by Dillenius, as quoted under the Synonyma, proves that such a change has been effected in it. As these double flowers are admired by the florists, the plant is worthy of being introduced in our gardens, where it thrives extremely well. Some roots planted in my garden in 1815, in very uncongenial soil, came up the succeeding year, and bloomed luxuriantly; the roots were again transplanted last Autumn, as well as last Spring, (1817,) and are yet alive.

*Sanguinaria Canadensis* inhabits a rich loose soil, on the declivities of hills, and the exposed borders of shady woods. Pursh says it generally delights in fertile soil. A large quantity of it grows on the side of a hill at the end of the Botanic-Garden of our University, where the soil is sandy and almost inclining to arid.

In auspicious seasons, Puccoon flowers in Pennsylvania in the last days of March; and even in the common weather of spring months, it may always be found in bloom about the first of April.

Dr. Thatcher has given the Indian name, as *Puison*. After many enquiries I believe this to be incorrect, and a mere corruption of the true aboriginal name, Puccoon, as given at the head of this article.

## CHEMICAL ANALYSIS.

From the chemical analysis of Puccoon made by Dr. Downey, it appears, that there is a gum, a resin, and a saponaceous or extractive matter in the root; and that the gum is in the greatest abundance. It results also from the same experiments, that the active principle of the plant resides chiefly in the gum and extractive matter, but especially in the former.

## MEDICAL PROPERTIES.

This plant is emetic and purgative in large doses; and in smaller quantities is stimulant, diaphoretic and expectorant; but it is here presented to physicians principally for its emetic power. It is a powerful medicine, and has produced dangerous effects when incautiously administered. Dr. Shoepf mentions the emetic and purgative virtue of the root. Fifteen or twenty grains of the pulverized root produce powerful emesis; but the medicine must be given in the form of pills, as the powder creates great irritation of the fauces. A decoction or extract will perhaps answer better. The root of this plant when exhibited as an emetic, has been found to dislodge worms from the stomach.\* This hint of the anthelmintic property of this part may not, perhaps, be unworthy of notice, though other emetics have sometimes produced the same effect. Dr. Shoepf has

\* Barton's Collections, &c. part 2. p. 52.



also mentioned that a weak decoction of the root was used in gonorrhœa, against the bites of serpents, and in bilious diseases ; that the juice was employed against warts ; and, (on the authority of Colden), that the powder of the root in the dose of one drachm, was exhibited in jaundice. Dr. Dexter of Cambridge, Massachusetts, says, that in some trials he made with the plant, it proved efficacious as a stimulant and diaphoretic, in doses of one grain of the powdered root, or ten drops of the saturated tincture.\* I have never used this plant with a view to its emetic effects, but from the experiments of Dr. Downey it would seem, that the dose recommended by Colden and Shoepf, is much too large. Neither have I much faith in the efficacy of this medicine in jaundice. If it has done good in this disease, it must have acted by its emetic power alone ; and in all probability other emetics would do as well. Combined however with calomel, it is not improbable that it would be serviceable. Dr. Thatcher mentions the reputed efficacy of this root in removing jaundice, and says it is believed to be the chief ingredient in the quack medicine known by the name of *Rawson's bitters*.† A spirituous tincture of the root is said to be frequently used in New England, in various diseases, as a tonic bitter.‡ This is the only form in which I have used the plant. I prepared some of the tincture from the recent roots, last spring. It is intensely bitter, approaching in its permanent impression on the tongue, to acerb. I have used this preparation of the plant in three cases, and with

\* Dr. Thatcher's Disp. p. 202.

† New Am. Dispensatory. p. 202.

‡ Barton's Collections, &amp;c.



the manifest effect of increasing the appetite and tone of the stomach. It was used in the same way as wine bitters. I can readily believe that in this form it has done good, at least as a prophylactic, in those low marshy grounds of the southern states, where the inhabitants are said to use it to guard them against intermit-  
tents, and what the country people call "inward fevers." The dose of the saturated tincture of the root, is from 30 to 80 drops twice a day, increasing or decreasing the number as circumstances may require.\* I have found 20 drops thrice a day, a good average dose. A decoction of the root has been recommended in the treatment of old and indolent ulcers; and the powdered root applied a few times in some cases of ill-conditioned ulcers, with callous edges and an ichorous discharge, produced a healthy state of the sores.† I have also heard of the application of the powdered root to a fungous tumor within the nostril, with the effect of producing detumescence, and bringing away frequently, small pieces of the fungus, which in the first instance impeded the progress of air through the nostril, and was supposed to be a polypus. A decoction of Puccoon has been employed with very good effect in that form of sore-throat, called by Dr. Darwin *peripneumonia trachealis*.‡ The medicine proved emetic. From this case Dr. Barton believes that "it promises to be an useful medicine, particularly on the foundation of its emetic and expectorant effects, in cases of cynanche maligna, or

\* Thatcher's Dispensatory, p. 202.

† Downey's Inaug. Diss. Phil. 1803.

‡ Barton's Collections, part 2. p. 40.

ulcerous sore-throat, in cynanche trachealis, or hives, and other similar affections. Its properties," continues the Doctor, "seem to be considerably allied to those of Seneca snake-root, which has been so beneficially employed in the same cases."\* Dr. Israel Allen, of Sterling, and others, have had recourse to this medicine as a substitute for digitalis, in coughs and pneumonic complaints; and on some occasions it is said that it proved as efficacious as Fox-glove, when administered with the same care; and it was found less debilitating than this medicine.†

The leaves and the seeds of Puccoon, are, according to Dr. Barton and Dr. Downey, evidently deleterious. The latter produce effects similar to those brought on by the seeds of Stramonium, or thorn-apple. The experiments of the last-named gentleman were made with the unripe seeds, and he says they exerted "a very considerable influence over the pulse, and a stupifying narcotic quality."‡ They therefore may be considered as incitants; and in common with other articles of that class, they are said sometimes to act as diaphoretics and diuretics.

The best time to collect this plant for medical purposes is, when the seeds are ripe, which is about the beginning of May.

#### OECONOMICAL USES.

The juice of the root of Puccoon makes a fine dye of an orange colour, and is used by the country people for staining flan-

\* Barton's Collections, &c. part 2. p. 40.

† Thatcher's Disp. p. 202.

‡ Inaug. Diss.

nels and woollen cloths. The Indians paint themselves with it, and use it as a dye for their baskets and articles of ornament; hence one of its vulgar names, *Indian-paint*. From the experiments made by Dr. Downey, with a view to find a suitable mordant to fix this dye, it appears, that the colour of flannel and silk stained with the juice, could never be entirely washed out; that the sulphate of alumine, or alumine alone, and the murio-sulphate of tin, are tolerable good mordants for flannel, cotton, silk, and linen. Murio-sulphate of tin, was the only mordant that fixed the colour on cotton and linen. I have heard that this plant is employed as a dye in the woollen-cloth manufactory near Wilmington, Delaware. If success has been obtained in fixing the colour permanently, there can be no doubt that the dye obtained from Puccoon will become a highly important article in domestic manufactures.

It is said that in Maryland, the farriers give the root of *Sanguinaria* to horses, to induce sweating; and to promote the shedding of their old coats of hair.

## TABLE II.

Fig. 1. Represents the *Sanguinaria Canadensis* of the natural and most common size, in the early part or middle of April. During the heat of the day, the petals are more horizontal than they can be well represented in a drawing; towards evening they converge; and at night they are wrapped up.

Fig. 2. The capsule or seed vessel, about half mature. As the plant, unless sought after with some care at the period of its inflorescence, will seldom be met with in flower, the capsule and large leaves of the advanced plant, may serve to identify it.





Table 3.



CORNUS FLORIDA.  
(Dogwood)

## CORNUS FLORIDA.

### DOGWOOD.

Large flowered Cornel; Dog-tree; Box-tree; New-England Box-wood; in the United States.—Great flowered Dogwood; Florid Dogwood; Male Virginian Dogwood; in England.—Mon-ha-can-ni-min-schi; and Hat-ta-wa-no-min-schi, of the Delaware Indians.

CORNUS florida, Lin. Sp. Pl. p. 171. Hort. Cliff. 38. Hort. Ups. 29. Cold. Noveb. 16. Wangenh. Amer. p. 51. t. 17. f. 41. Shoepf, Mat. Med. Am. p. 14. L'Herit. Corn. n. 3. p. 4. Ait. Hort. Kew. ed. 2d vol. 1. p. 261. Marshall, Arbust. p. 35, 36. Bartram's Trav. p. 401. Walk. Inaug. Dis. Barton's Collections, ed. 3d. vol. 1. p. 12, 47. vol. 2. p. 17. Mich. Fl. Boreali-Am. 1. p. 91. Mich. f. Hist. des Arb. Fores. vol. 3. p. 138. Catesb. Car. t. 27. Pur. Fl. Am. sep. 1. p. 108. Schmidt, Arb. t. 62. Bot. Mag. 526. Pers. Syn. vol. 1. p. 143. Willd. Sp. Pl. p. 661. Roy. Lugdb. 249. Gron. Virg. 17. Kalm. it. 2. p. 321. et 3. p. 104. Mill. Dict. n. 3. Du Roi Harbk. tom. 1. p. 167. Pluk. Alm. 120. Clayt. n. 57. Walt. Car. p. 88. Pict. Reg. 43. p. 3349. Basseporte. Muhl. Cat. Am. Sep. p. 17. Bart. Fl. Virg. p. 45. Coxe's Am. Disp. p. 290. 2d ed. 286. Thatch. Disp. p. 114. Pharm. Mass. Med. Soc. p. 13. Barton's Prodr. Fl. Phil. p. 26. Elliot, Car. &c. p. 207. Nuttall, Genera of American Plants. p. 96.

### CORNUS.

Gen. Plant. 194.

CORNUS. *Cal.* Superus, 4-dentatus, deciduus. *Drupa* nuce 2-bilocularis.

Nat. Syst. Juss. *Caprifolia*. Classis XI. Ordo III.

CORNUS. T. L. \* Cornuiller. Calix 4-dentatus. Petala 4 parva, basi latiora. Stamina 4 iisdem alterna, antheræ incumbentes. Stylus 1.; Stigma 1. Drupa parva, non coronata, fæta nuce 2-loculari 2-sperma. Arbusculæ aut fructices; folia opposita basi nuda, in unica specie alterna; flores in

aliis corymbosi terminales foliis tardiores, in aliis præcociore umbellati aut capitati involucro communi 4-phyllo, interdum magno colorato. Corculum seminis longum, perispermo carnosio involutum. Gen. Pl. Juss. p. 214. ed. 1789.

Nat. Ord. Lin. *Stellatæ*.

Classis *Tetrandria*. Ordo *Monogynia*. Lin. Syst.

*Cornus florida*, foliis ovalibus, acuminatis, subtus albicantibus; floribus sessiliter capitatis; involucro maximo, foliis apice deformi quasi obcordatis; fructibus ovatis, rubris. Mich. fil. Hist. des Arb. Forest. Am. vol. 3. p. 138. et Mich. Fl. Bor. Am. 1. p. 91.

*Cornus florida*: arborea; foliis ovatis acuminatis, subtus albicantibus; involucro maximo, foliolis obcordatis; drupis brevi-ovatis, coccineis, apice nigris. Bart. Fl. Virg. Gron. p. 45.

*Cornus florida*: arborea; foliis ovatis acuminatis, involucris magnis quasi obcordatis, drupis ovatis. Willd. Sp. Pl. 1. p. 661.

#### SYNONYMA.

*Cornus* arborea involucro maximo, foliolis obcordatis. Lin. Cliff. 38. Spec. 171.

*Cornus* mas Virginiana, flosculis in corymbo digestis a perianthio tetrapetalo albo radiatim cinctis. Pluk. Alm. 120. t. 2. f. 3. Catesb. Car. 1. t. 27.

*Cornus* mas floribus quasi in corymbo digestis, perianthio albo e quatuor foliis composito radiatim expanso cinctis. Clayt. n. 57.

Houttuyn Lin. Pfl. Syst. 1. p. 237.

Schönblühender Hartriegel. Willd. (German.)

Habitat in Sylvis Sep. Am. 2

*Pharm.* Corni floridæ Cortex, (caulis et radices); *Gemmæ*; Flores.

*Qual.* Amara. tonica.

*Vis.* Adstringens. *Gemmar.* carminativa.

*Usus.* Febres intermittentes. Ligni usus mechanicus.

Decoct. Corni, a decocto corticis peruviani gustu vix discernendum; Intermittentes aequè certo curat ac Cort. Peruv. Vires addita Serp. Virg. acuuntur. Rad. Sassaf. et Cort. Corni  $\frac{aa}{3} \frac{3}{4}vj$ . Coqu. cum aquæ libris viii. ad remanetiam lb. i. ad ulcera cancræ, maligna tepide et frequenter applicata, prodest. Shoepf. Mat. Med. Am. p. 14.

Arbor parva, conspicua involucris florum maximis coloratis. Fructibus rubri. Ineunte frondescentia floret. L'Hert. Cor. 3.

Dogwood is so common throughout the United States, that it is well known to most people. It is the largest tree of its genus, and indeed attains such an height, that it is described by Michaux the



younger, in his elegant work on the forest-trees of North America. Its wood, its flowers, and its bark, the latter entitling it to a place in this work, render it an extremely interesting tree. The name by which it is generally known throughout the United States, is that of Dogwood ; it is recognized less frequently by that of Boxwood. But it is also known in different states, and even in different parts of the same state, by the various other names enumerated at the head of this article. Michaux f. in the work alluded to, informs us, that in the state of Massachusetts, between the 42d and 43d degrees of latitude, the Dogwood is first observed ; and that it is afterwards found without interruption in all the eastern and western states, as well as in the Floridas as far as the Mississippi. He remarks that in all this tract of country, it is the most abundant of all the arborescent vegetables ; but that it is comparatively most plenty in New-Jersey, Pennsylvania, Maryland and Virginia, wherever the soil is new, unequal and gravelly. More to the south, in the two Carolinas, Georgia and the Floridas, it is only seen on the borders of marshes, and not in the pine-barrens, where the soil is too sandy and arid for it to grow. In the more fertile portions of Kentucky, and the eastern section of Tennessee, it does not grow abundantly among the forest trees, but is only found where the soil is stony and indifferent.\* According to Michaux, the *Cornus florida* sometimes attains the height of 30 and 35 feet, and a diameter of 9 and 10 inches. It is usually,

\* Michaux, fil. Arbres Forest.

however, 18 or 20 feet high, by 4 or 5 inches in diameter. The trunk is strong, invested with a rough blackish bark, which is tolerably thick, and very much separated into fissures or cracks. The branches are numerous, spreading, and disposed regularly; being sometimes opposite to each other, and occasionally arising by fours. Michaux remarks, that the younger branches take a semicircular direction upwards. The leaves are about three inches in length; opposite, oval, entire, acuminate, slightly glaucous or whitish underneath, and presenting on their upper surface many conspicuous ridges. Towards the end of summer they become speckled with black dots, and on the approach of winter turn to a dull red colour. Michaux informs us, that in the states of New-York and New-Jersey, the flowers of this tree are fully opened about the tenth or fifteenth of May, at which time the leaves only begin to be developed. In Pennsylvania the tree is in full bloom about the 15th of May, in ordinary seasons. It flowers very regularly; so much so, that it is said by the late Professor Barton,\* that formerly "some of our southern tribes were accustomed to name the spring season from its flowering." The flowers are terminal on the little branches. They are small, of a greenish-yellow colour, and aggregated in numbers. They are garnished with an involucre from three to four inches large, which surrounds them. This involucre is composed of four large obcordate folioles, of a fleshy or coriaceous texture. They are white, sometimes tinged with violet. The outer extremity of each foliole is notched, having the appearance of disease or injury. The notch-

\* "Collections," &c.

es are purplish, or dusky rose coloured. I have understood that there is an individual variety of this tree in the woods near Philadelphia, having bright red or rose coloured involucres. This variety, which I have not seen, must be an exceedingly magnificent tree, and highly ornamental. It is to the large involucres that the flowers of this cornel owe their character for elegance. When Dogwood is in full flower, it is a strikingly beautiful tree, and very ornamental to the forests; the more so, from the early period of its flowering. The calix is monophyllous, small, and four-toothed. It is deciduous, never continuing until the berries are ripe. The corolla is composed of four petals. The stamens are four in number, and equal. Pistil one, consisting of a roundish germ, beneath. The style filiform, and nearly the length of the corolla. Stigma obtuse.

The flowers are succeeded by oblong berries, of a rich, shining, crimson or carmine colour; always collected together to the number of three and four, as has been remarked by Michaux, and as I also have often observed. They are ripe about the middle of September; and are then eagerly devoured by different birds, such particularly as the *Turdus migratorius*, or Robin; the *Turdus rufus*, or Thrush; and I have sometimes seen the rare bird called Woodthrush, *Turdus minor*, employed busily in eating them. It must be a food peculiarly grateful to this melodious little songster, to induce it to leave its favourite and almost constant haunts, the summits of the tallest forest trees.



## CHEMICAL ANALYSIS.

From the chemical investigation of the properties of the cornels, made by Dr. Walker,\* it appears : that upon distilling equal quantities of the pulverised bark of the root of *Cornus florida* and *sericea*, and of red Peruvian bark, a fluid was obtained from the latter, differing from that procured by the two former in no respect, but in possessing a flavour, not aromatic, but peculiar to the bark. The fluid was clear and transparent. It appears further, that upon subjecting these materials to a second distillation, the fluids obtained had a more disagreeable smell than those from the first, and a taste somewhat acerb. The fluid yielded by the Corni acquired a lemon colour ; that from the Peruvian Bark was tinged with red. The following results are given by Dr. Walker, of the changes which took place upon testing these different fluids :

The fluid distilled from

	<i>With litmus paper.</i>	<i>Oxy-sulphate.</i>	<i>Ace. Lead.</i>	<i>Carb. Alumen.</i>
the {	Corn. flor. Red.	Black.	Precipitate.	Effervescence.
	Corn. seri. Red.	Black.	Precipitate.	Effervescence.
	Cort. Peru. Red.	Brown.	Precipitate.	Slight Effervescence.

\* Inaugural Dissertation, p. 24 and 25.



The inference deduced from this experiment is, that gallic acid is contained in the three substances used, and that it exists in greater quantity in the Corni than in the Bark. The gallic acid also comes over in distillation, in an uncombined state. A decoction of the bark of the root of *Cornus florida*, yields by evaporation, a gum-like mass. Two drams of this gum were obtained by Dr. Walker, from seven and an half ounces of the decoction. With a view to ascertain the constituent parts of this mass, the doctor "macerated two drams in successive quantities of alcohol, until the last portion ceased to be changed in colour and taste; this, like the former portions, was separated from the gum by the filter; after the gum was dried upon the filter it was collected, and weighed only half a dram. The dried gum was then dissolved in a small quantity of water. The solution was imperfect, not transparent, nor bright coloured; it possessed no particular taste, which might not be ascribed to its viscid consistence; and it produced no change of colour with a solution of the oxy-sulphate of iron." Suspecting, from the want of transparency, that there might be some mucilage in the solution, the doctor "added in small portions, diluted sulphuric acid to the solution; a precipitate slowly fell to the bottom in a coagulated form. When the precipitation had ceased, it was separated from the solution by the filter, and evaporated to dryness, at the same time with the solution. By weighing each residuum, the mucilage was detected in the proportion of three to five; that is, eighteen grains of gum, and twelve of mucilage."\*

\* Inaugural Dissertation, p. 24 and 25.

the addition of the acid, Dr. Walker inferred that the want of transparency in the gummy solution, was not entirely owing to the presence of the mucilage ; but “to the fine powder of the medicine, which the viscosity of the fluid suspended and concealed ; and probably the change of colour noticed above, was owing to the carbonation of these particles by the acid.”\* The *Cornus florida* contains more extract and gum, than the Peruvian bark, and is more soluble in water ; while the latter, containing more resin, is more easily soluble in alcohol. The powder of the bark of *Cornus florida* is more miscible in water than that of the *Cinchona*, for the same reason.†

It appears from a summary of Dr. Walker’s experiments, that the Dogwood and Peruvian Bark possess the same ingredients : gum, mucilage, and extract ; and that the last contains the gallic acid, and tannin, though in different proportions. The Dogwood possesses most of the gum, mucilage and extract ; and the Peruvian Bark, the most resin. The extract and resin possess all their active virtues ; the extract all their tonic power. The resin when separated from the extract, is stimulant only ; and probably the tonic power of the extract is increased, when combined with a portion of the resin, as in the spirituous tincture.‡

#### MEDICAL PROPERTIES.

The similarity between the Dogwood and the Peruvian bark, in their sensible qualities, their chemical analysis, and their action on

\* Inaugural Diss. p. 25.

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† Ibid. p. 28.

‡ Ibid. p. 29.

the incised and dead fibre, (as shown in the experiments of Dr. Walker) sufficiently proves an identity in their medicinal effects. And actual experience with the bark of the *Cornus florida*, by many physicians, entitles it to be ranked among the best tonics of our country. As early as the year 1787, Schœpf was acquainted with the medicinal virtues of this tree; and he speaks of it as a bitter and a tonic, as well as of its use in intermittent fevers. The bark is likewise astringent. Dogwood is also a stimulant; for according to Dr. Walker's experiments, the internal use of it, always rendered the pulse quicker than natural, and often fuller and stronger.\* Professor Barton remarks, speaking of the two cornels; "I can add but little from my own experience concerning the application of these two species of *Cornus* to the cure of diseases. I believe, however, that it may, with entire safety, be asserted, that as yet we have not discovered within the limits of the United States, any vegetables which have been found so effectually to answer the purpose of the Peruvian bark, in the management of intermittent fevers, as the *Cornus florida* and *Cornus sericea*."† It appears from the account given by the late Dr. Amos Gregg of Bristol, of the use of the Dogwood in decoction, that it produced pain in the bowels, which however was readily relieved by a few drops of laudanum. He believed this property of inducing pain was confined to the article in its recent state; and he further observes, that he never found it to disagree with the stomach, by exciting cathartic or emetic effects, after it was

\* Inaugural Diss. p. 46

† "Collections," &c.



a year collected. Dr. Gregg says he "used the Dogwood twenty-three years, during which time he found its virtue such as to convince him it was not inferior to the Peruvian bark in curing intermittents, nor inferior as a corroborant, in all cases of debility."\* He gave the powder in doses of thirty-five grains. This quantity he found equal to thirty grains of the Peruvian bark. In some cases he combined the Dogwood with the Virginian snake-root, in the proportion of thirty grains of the former and six of the latter; repeated every half hour for two days. He concludes his communication to Dr. Walker with this observation: "I have often used the Dogwood joined with Gentian, Columbo, Camomile, and with Aromatics in bitters, and have found it equal to the Peruvian bark, and therefore conclude it is a valuable medicine."† Dogwood has also been used in combination with the bark of the *Liriodendron tulipifera*, or tulip-tree, both in decoction and in substance. The bark of the root, stem, and smaller branches, is used. That of the root is by some thought most efficacious. An infusion of the ripe berries in spirit has been used in intermittent fevers. We learn that our Indians use an infusion of the flowers for the same purpose; hence we may infer, that these are possessed of the same tonic property as the bark. This infusion of the flowers has been recommended in flatulent colic; and Dr. Barton says he has used it as a tea.‡ The Professor also mentions from the information of the Rev. Dr. Nicholas

† Walker's Inaugural. Diss. p. 49.

† Inaug. Diss. p. 49.

‡ Barton's Collections.



Collin, of Philadelphia, that in an intermittent fever which prevailed in West Jersey, about thirty years ago, the bark of the Dogwood was found more useful than the Peruvian bark. It was used in decoction. Dr. Barton upon this subject makes this remark : "I must candidly confess, however, that I have heard of more instances of the failure of this cornel than of the Peruvian bark. But has any vegetable," he continues, "so completely prevented the recurrence of the paroxisms of intermittents as the last mentioned one."\*

Michaux in his work on the forest-trees of North America, has noticed the medicinal properties of this tree. He speaks of the liber or inner bark being a fine bitter, and very useful in intermittent fevers. The taste of Dogwood, like that of the other medicinal species, is "a more simple and agreeable bitter than the Peruvian bark ; it has nevertheless considerable austerity combined with it ; the decoction possesses most of the latter, and the hot triturated infusion the next. The decoction and hot infusion are less elegant preparations. The hot menstruum holds in suspension some of the fine powder, which is not entirely deposited by cooling, nor in passing through the filter."†

From all the information I can collect on this subject, and no indigenous plant has excited more attention, I am disposed to believe : that as a tonic, the powdered bark of *Cornus florida*, is well en-

\* "Collections," &c.

† Walker's Inaug. Diss. p. 23.

titled to the notice of physicians ; and it certainly may be safely recommended as a good substitute for the cinchona, particularly as that which now fills the shops, is seldom genuine, but adulterated by oak-bark, and frequently altogether a fictitious article. I have never used the Dogwood, in any form as a medicine, and therefore call the attention of our physicians to it, entirely on the authority of those who have written on the article, and frequently employed it. I know it is much used in different parts of the United States, and I have uniformly heard its virtues commended. Its superior miscibility or solubility in water, to the Peruvian bark, may occasionally render its use more convenient than this last substance.

#### ECONOMICAL USES.

The wood of the *Cornus florida* is of a very fine texture, hard, compact, heavy, exceedingly durable, and susceptible of a beautiful polish. Hence it is much used by cabinet-makers and joiners, for ornamental in-laying. The sap is white, and the heart chocolate colour. This wood answers very well for plane-stocks, squares, two-foot rules, mallets, and for the handles of gimblets, gauges, hand-chissels, and other light tools. Indeed its properties so nearly resemble those of box-wood, that it may be profitably substituted for it in almost all its common uses ; and in these it is improved in appearance by a faint stain of yellow dye. This gives it the exact resemblance of box. I have no doubt, that if it were felled at the proper time, and well-seasoned, it would answer extremely well for

flageoletts, fifes, childrens' whistles, and all the humbler kinds of wind-instruments. Michaux remarks that for whatever purpose it may be destined, it should not be worked up till thoroughly dry ; otherwise it is apt to split. The moderate size of the tree will always circumscribe the employment of its wood, to the various uses I have mentioned. Michaux, who has so industriously enquired into the œconomical uses of the wood of our forest trees, says some farmers make the teeth of their harrows, and the fastenings of the collars of their horses, of this wood. That the young shoots, four or five years old, are used for light hoops on little kegs ; but its use in this latter way he says is very limited. That in the middle states they use the wood in mills, for the cogs of the wheels ; and in many parts of the country the peasantry make forked collars for their hogs, to keep them from penetrating beyond the fences which enclose the cultivated fields, of the Dogwood, the branches of which are naturally scattered. The wood is excellent for burning, he remarks, but its small size does not render it saleable for this purpose in the large cities.\*

The wood of the *Cornus florida* is much used by Dentists, in the insertion of artificial teeth ; and the young branches stripped of their bark, and rubbed with their ends against the teeth, render them extremely white. The creole negroes who inhabit Norfolk in Vir-

\* Arbres Forest.



ginia, in great numbers, are in the constant practice of substituting the Dogwood twigs, for a West India shrub, in cleansing their teeth. The striking whiteness of these, which I have frequently observed, is a proof of the efficacy of the practice. The application of the juice of these twigs to the gums, is also useful in preserving them hard and sound.

The powdered bark of Dogwood makes a good ink, which was used by Dr. Walker, in writing his thesis. The following is the formula.

$\frac{1}{2}$ oz. Pulv. Cort. Cor. flor.	}	Mixed together.
2 dr. Sulph. Iron.		
2 sc. Gum. Arab.		
16 oz. Aqua font.		

The ripe berries infused in spirit or brandy, afford an excellent wine-bitter, for common purposes,\* and as a morning bitter. A decoction of the bark of Dogwood has been employed with good effect in a malignant fever, called the "yellow water," "Canada distemper," &c. which, within the last twelve years has carried off a great number of horses in the United States.†

\* Barton's Collections.

† Ibid.



TABLE II.

Fig. 1. Represents a flowering twig of Dogwood, at which time the young leaves are small.

Fig. 2. The fruit and leaves of autumn.

Fig. 3. A single flower, with stamens, petals, and calix.

Fig. 4. The calix and pistil.







Drawn from Nature by R. A. Schumacher

Engraver: Vallance Bailey & Co.

TRIOSTEUM PERFOLIATUM.

(FEVERWORT)

(Red flowered fever-root.)



## TRIOSTEUM PERFOLIATUM.

### FEVERWORT...RED-FLOWERED FEVER-ROOT.

Fever-root. Gentian. Bastard Ipecacuanha. Wild-Coffee. Dr. Tinker's weed. False Ipecacuan.  
White Gentian. Sweet-Bitter. Cinque. Perfoliate Fever-root.

TRIOSTEUM PERFOLIATUM. Lin. Sp. pl. 250. Amoen. acad. 4. p. 516. Dill. elth. 394. t. 293. f. 378. Mill.  
Dict. n. 1. Vahl. Symb. 3. p. 37. Gron. virg. ed. n. 31. Cold. noveb. 244. Willd. Sp. pl. Tom. i. p.  
990. Shæpf. Mat. Med. Am. p. 23. Pers. vol. 3. p. 214. Ait. Hort. Kew. ed. 3. Vol. i. p. 381. Mich. Fl.  
Boreal. Am. vol. i. p. 107. Muhl. cat. Am. Sep. p. 23. Pur. fl. Am. Sep. vol. i. p. 162. Barton's "Col-  
lections," &c. vol. i. p. 29. Coxe's Am. Disp. ed. i. p. 679. ed. 3d. p. 634. Barton's Prod. fl.  
Phil. p. 31. Elliot, fl. car. &c. Nuttall, Genera Am. Plants.

### TRIOSTEUM.

TRIOSTEUM. Lin. *Cor.* monopetala, subaequalis. *Cal.* longitudine corollae. *Bacca* 3-locularis, 1-sperma,  
infera.

Nat. Syst. Juss. *Caprifolia*. Classis XI. Ordo III.

TRIOSTEUM. L.\* *Calix* 5-fidus, laciniis lanceolatis persistentibus, basi bracteatus. *Corolla* vix calice lon-  
gior, tubulosa 5-loba inæqualis. *Stamina* 5, non exserta. *Stigma* crassiusculis. *Bacca* coronata  
obovata 3-locularis, 3-sperma. *Herbæ erectæ; foliorum petioli infra juncti; flores plurimi axillares*  
*sessiles*. Gen. Plant. de Juss. p. 211.

Classis *Pentandria*. Ordo *Monogymia*. Lin. Syst.

TRIOSTEUM PERFOLIATUM. T. foliis ovalibus acuminatis, basi abrupte angustatis, latius angustiusve connatis: axillis uni-plurifloris: corolla obscure purpurea. Mich. Fl. Boreal. Am. sub. synonym. T. maji.

### SYNONYMA.

TRIOSTEUM majus. Mich. Fl. Boreali-Am. Vol. i. p. 107.

TRIOSTEUM foliis connatis, floribus sessilibus verticillatis. Vahl. symb. 3. p. 37.

TRIOSTEUM floribus verticillatis sessilibus. Mill. dict. n. 1.

*TRIOSTEOSPERMUM*, latiore folio, flore rutilo. Dill. elth. 394. t. 293. f. 378.

Houttuyn Lin. Pfl. Syst. 5. p. 612.

Breithlättriger Dreystein. Willd. (German.)

Habitat in America Septentrionali. *2*

Folia perfoliata. Willd. Sp. pl. Vol. i. p. 990.

Pharm. *Triostei* Radix.

Qual. amara. odor. pl. nauseosus; sapor herbaceus.

Vis. emetica.

Usus: febres intermittentes, pleuritis. Schæpf. Mat. Med.

#### DESCRIPTIO UBERIOR.

*PLANTA* bi vel tri-pedalis, aliquanto rara, et tota interdum purpurascens. Radix perennis, horizontalis, elongata. Caules multi, simplices, erecti, cylindrici. Folia magna, oblongo-ovalia, acuminata et fere connata, in basi panduriforma terminata. Versus apicem, basi attenuata et amplexicaules; omnes subtus dense pubescentes, cum nervis et costis conspicue prominentibus. Folia in summitate, sub florescentia, minora sunt, et convoluta; postquam magna et purpurascunt. Flores in axillis foliorum, venticillatæ apparentes. Corolla vix calice longior, tubulosa, curvata, basi gibbosa, et apice in quinque lobis auriculatis, incisa; lacinia cordatæ et clausæ. Stamina quinque, in tubo corollæ tecta: Pistillum ultra corollam; stigma crassiusculum. Lacinia calicis quinque, persistentes, lineares, ciliatæ, et omnino plerumque purpurascunt. Germen inferius, uno-bracteatum. Baccæ coronatæ, obovatæ, purpureo-coccineæ, tri-loculares, et semina tria dura complectens.

Barton's Flora Philadelphica, M. S.

THE root of *Triosteum perfoliatum* is perennial, horizontal, about eighteen inches or two feet long, three quarters of an inch in diameter, and nearly of an uniform thickness from the extremity to within two or three inches of the origin of the stems. At this place it is contorted, tuberculated, or gibbous, and of a brownish colour. The colour of the horizontal caudex is yellow-ochre without, and whitish internally; and the fibres which proceed from it, are of an ochroleucous hue. These are sometimes so large, that they may be considered rather as branches or forks of the main root. The plant

is from two to three feet high, and bushy, several stems arising from the same root. In favourable situations I have seen it near four feet tall. The stems are about 3-8ths of an inch in diameter, simple, erect, cylindrical, pubescent, and of a green colour. The leaves are large, oblong-oval, acuminate, somewhat panduriform towards their base, where they become suddenly narrowed. They are mostly connate, until they approach the fourth pair from the top: these upper ones are more attenuated at their bases, and rather amplexicaule. The under surface of all the leaves is covered with a soft dense bluish-white pubescence, conspicuously apparent on the middle rib and nerves. On their upper surface, though the pubescence cannot be observed readily by the naked eye, it is discernible by the glass, more sparse than below. The nerves are numerous, and commonly alternate, as respects their union with the costa. The two uppermost pairs of leaves are small and closely convoluted, while the plant is in flower. After the florescence is past, they are developed to the full size of the others, or become rather broader at their middle, and assume a brownish purple colour. I have sometimes observed the whole plant of this hue, though in general it is confined to the upper portion. The flowers are axillary, sessile, and arranged in triplets round the stem, appearing whorled. The corolla is reddish purple above, striated below with lake, blended into white, and every where covered with a dense pubescence. It is tubular, curved, and widest at the top, where it is divided into five auriculated segments or lobes; the laciniae being cordate and closed on each other. The lower end of the tube terminates in an abrupt



gibbosity, which is articulated with the germ. The stamens are five in number, inclosed within the corolla, and alternate with the lobes or laciniaë. The pistil is somewhat longer than the stamens, and appears conspicuously above the corolla. Sigma oblong. The calix is composed of five linear segments obscurely ciliated on their margins, of a dark purplish colour, and half an inch long. The germ to which they are articulated, is beneath ; and garnished with a single green bract, longer and broader than the calix leaves, and proceeding from its base. The berries succeed to the flowers, generally in the number of six to each axil ; sometimes there are but three, but occasionally nine, in luxuriant plants. They are ovate, of a dark purple colour, with three divisions, and contain three hard seeds. They ripen in September.

This plant is somewhat rare, though I have seen it on the rocky limestone hills a little beyond the Maryland line, on the York and Baltimore road, in great quantities. It is also very frequent in the hilly woods bordering the Conestogo Creek, near Lancaster in Pennsylvania ; and remarkably abundant in a thicket about one mile from the town of Lancaster, on the seat of Charles Smith, Esq. In the vicinity of Philadelphia it is very rare. Indeed I have only found it in a wild state, on the Schuylkill, near Lemon-hill. It delights in rich limestone soil, on rocky or stony ground, preferring the shade ; but is often found in different situations. Its range is, from the northernmost state of New-England to Carolina ; and probably further south. Flowers in June.



## MEDICAL PROPERTIES.

*Triosteum perfoliatum* is a mild cathartic, and it is for this virtue that the plant is here noticed. I am aware that Shoepf speaks of it as an emetic only, and alludes to its use in intermittent fevers and pleurisy. One of the common vulgar names also, Bastard Ipecacuanha, indicates the well-known emetic power which it unquestionably possesses. But it is only in large doses that vomiting is produced. In the quantity of twenty or thirty grains, it is a good cathartic. It has been said on some occasions to operate as a diuretic;\* but Professor Barton who observed this effect, justly remarks that this may have been only an accidental circumstance, rhubarb having been known by C. Piso, to produce the same effect.† The part of the plant used for medical purposes, is the cortex, or bark of the root. When the root is dry, it is brittle, and is pulverised easily. Perhaps it is not necessary to separate the bark from the ligneous part; for in all likelihood the whole root is endued with the same medicinal property. The Autumn is the proper time to collect the plant for use.

## ECONOMICAL USE.

I learned from the late Rev. Dr. Muhlenberg, that the dried and toasted berries of this plant, were considered by some of the Ger-

\* Barton's "Collections."

† Ibid.

mans of Lancaster county, as an excellent substitute for coffee, when prepared in the same way. Hence the name of wild coffee, by which he informed me it was sometimes known.

TABLE IV.

Fig. 1. Represents the upper portion of the plant of the natural size.

Fig. 2. A flower with the calix and bract.

Fig. 3. The corolla separated.

Fig. 4. The same opened, shewing the situation and insertion of the stamens and pistil.

Fig. 5. A ripe berry, with the crown formed by the persistent calix.







GILLENIA TRIFOLIATA.

( Indian-physic.)



## GILLENIA TRIFOLIATA.

### INDIAN PHYSIC.

Ipecacuanha. Beaumont-root. Ipecacuan. American Ipecac. Three-leaved Spiræa. Indian lippo.  
Meadow-sweet. Dropwort. Bowman's-root.

GILLENIA trifoliata. Lin. Sp. Pl. 702. Amoen. acad. 4. p. 523. Hort. Cliff. 191. Hort. Ups. 131. Roy. Lugdb. 277. Gron. Virg. 55. Pluk. alm. 393. t. 236. f. 5. Raj. Suppl. 330. Moris. Hist. 3. p. 323. Gron. Virg. ed. n. 77. Cold. Noveb. 117. Mill. Dict. n. 7. Mærch. Meth. Suppl. p. 286 Bot. Mag. 489. Mill. ic. 256. Coxe's Am. Disp. ed. 3d p. 569. Thatcher's Disp. p. 343. Pers. Syn. Pl. vol. 2. p. 47. Barton's Cullen. vol. 2. p. 335. Chapman's Elements of Mat. Med. &c. vol. 1. p. 111. Shoepf. Mat. Med. Am. p. 80. Mich. Fl. Boreali-Am. vol. 1. p. 294. Willd. Sp. Pl. Tom. 2. p. 1063. Ait. Hort. Kew. ed. 3d. vol. 3. p. 257. Pursh Fl. Am. Sep. vol. 1. p. 343. Muhl. Cat. Am. Sep. p. 23. Barton's Collections, &c. ed. 3d vol. 1. p. 27. vol. 2. p. 39. Barton's Prod. Fl. Phil. p. 55. Nuttall, Gen. Am. Plants.

### GILLENIA (Mærch).

*Cal.* Inferus, campanulatus, seu campanulato-tubulosus, 5-fidus. *Petala* 5. *Styli* 5. *Caps.* 5-locularis, polyspermæ.

Nat. ord. Lin. *Senticosæ*.

Nat. syst. Juss. *Rosacæ*. Classis XIV. Ord. X.

Classis *Icosandria*. Ord. *Pentagynia*. Lin. Syst.

GILLENIA trifoliata. G. herbacea: foliis trifoliatis; foliolis lanceolatis: floribus laxè subpaniculatis, pentagynis; calice tubuloso campanulato. Mich. Fl. Bor. Am. sub synonym. Spiræae trifoliatæ.

*Gillenia trifoliata.*

*G. foliis ternatis lanceolatis serratis subæqualibus, stipulis linearibus integris, floribus terminalibus laxè paniculatis 5-gynis, calice tubuloso campanulato.* Pur. Fl. Am. Sep. sub. synonym. *Spirææ trifoliatæ.*

## SYNONYMA.

*SPIRÆA trifoliata.* Lin. Sp. Pl.

Willd. Sp. Pl. vol. 2. p. 1063.

Mich. Fl. Boreali-Am. vol. 1. p. 294.

Pursh Fl. Am. Sep. vol. 1. p. 343. et aliorum Auctorum.

*SPIRÆA* foliis ternatis serratis subæqualibus, floribus subpaniculatis. Sp. Pl. 702. Mill. Dict. n. 7. et ic. t. 256.

Filipendula foliis ternatis. Hort. Cliff. 191. Hort. Ups. 131. Roy. Lugdb. 277. Gron. Virg. 55.

Ulmaria major trifolia, flore amplo pentapetalo, virginiana. Pluk. Alm. 393. t. 236. f. 5.

Raj. Sup. 330.

Ulmaria virginiana trifolia, floribus candidis amplis longis et acutis. Moris. Hist. 3. p. 325.

Houttuyn Lin. Pfl. Syst. 7. p. 137.

Dreyblättrige Spierstaude. Willd. (German.)

Willd. Sp. Pl. tom. 2. p. 1063.

Pharm. *Gillenie trifoliatæ* Radix.

Vis. Emetica purgans. dos. ℥ij. ℥i aequè tuto operantur ac unquam ipecacuanha. Shoepf.

Mat. Med. Am. p. 80.

## DESCRIPTIO UBERIOR.

*RADIX* perennis. Caulium plurimum, versus summitatem ramosarum, et plerumque rubicundarum. Folia ternata; foliola supra lanceolata, serrata, sub-æquales: infra obtusata in acumine abrupte terminata, et interdum in unico laterali lobo incisa. Stipulis linearibus, et nonnunquam subulatis. Floribus formosis, terminalibus, in laxa panícula dispositis. Petala lineari-lanceolata, obtusiuscula, et ubi cum calice juncta, sub-unguiculata. Colore sunt alba, rariter albido-rosea. Calix tubuloso-campanulatus, ventricosus, in basi attenuatus. Stamina inclausa brevia; antheris parvulis. Capsula 5-locularis, polysperma. Habitat in umbrosis sylvis montosis, plurimum humidis soliis gaudens. Floret Junio.

Barton's Flora Philadelphica. MS.

**THE** root of *Gillenia trifoliata* is perennial. It is composed of numerous long brown slender caudexes, radiating from a thick

tuber. Some of these are knotted, for a considerable portion of their length, like one or two of those represented in the plate. The number of stems proceeding from the root varies. Sometimes there is only a single one, and occasionally many arise from the same root. The stems are branched above; about two and an half, or three feet high; round, and commonly of a reddish colour. The leaves are universally ternate. The leaflets are lanceolate, serrate, and nearly equal. The lower ones, broad towards the apex, and terminating in an abrupt acumination, with occasionally a deep lateral incisure forming a lobe, like the out-line leaf represented in the plate. The stipules are linear, occasionally on the smaller branches, subulate, and always entire. The flowers are terminal, forming a loose pannicle. They are composed of five linear-lanceolate petals, somewhat obtuse, and bent nearly in a right angle, at the distance of an eighth of an inch from their insertion. The calix is tubular, campanulate, ventricose, tapering at the base, and terminating in five pointed segments. Stamens 20 in number, short. Anthers small. The capsule is 5-locular, and contains many seeds. This species of *Gillenia* inhabits shady woods, on mountains and hills, from Canada to the high gravelly banks of the Ohio, in a southwestward direction. It is then superseded by its congener, *G. stipulacea*. Pursh says it is found as far as Florida, in shady woods and on bogs. It is found plentifully in the neighbourhood of Philadelphia, in hilly woods, and sometimes on the borders of rivulets. It is in full flower in June.



*Gillenia trifoliata* may be readily propagated by seeds, or by transplanting roots. The seeds should be sown in a shady border, soon after they are ripe; for if they are sown in the spring, they will not come up till the year after, and frequently fail. When the plants appear, they must be kept clean from weeds, but must not be removed till autumn, when their leaves begin to decay. They may then be either transplanted where they are destined to remain, or into a marshy bed, where they may grow a year or two, to get strength before they are finally disposed of. The plant delights in a shady situation and a moist soil.

#### MEDICAL PROPERTIES.

*Gillenia trifoliata* has justly obtained a place in the Dispensatories of our states, under the head of Emetics. In many respects, it has been compared to the officinal ipecacuanha. It appears that its medical virtues were not unknown to Linnæus, who speaks of its reputed powers, as somewhat extraordinary in a plant belonging to his natural order *senticosæ*. "*Spiræam trifoliatam ipecacuanham vocant et vomitum facere dicunt, quod sane singulare esset in hoc ordine,*" (alluding to the *Senticosæ*.\*). Though the stem and leaves of this plant, as well as the root, are reputed to possess emetic powers, it is the root alone which has been used by the different physi-

\* Caroli a Linne, M. D. Prælectiones in Ordines Naturales Plantarum. Edidit P. D. Giseke. p. 449 Hamburgi: 1792.



cians who have employed it. It has been said that the cortex of the root exclusively, is endued with emetic virtue, and the powder of this part has accordingly been uniformly recommended for use. The ligneous portion is reputed to be inert. Probably the idea of inactivity in this woody part, has been carried too far. Schoepf, in his account of the medicinal virtues of Indian-physic, is silent on this point. It is said to possess a tonic power, with its emetic virtue,\* and hence has been thought peculiarly beneficial in the intermittent fever. I have but little reliance on this opinion, and it is indeed of secondary importance. The dose is thirty grains of the powder for an adult. In this quantity it is a safe and efficacious emetic. It is said the country people have frequently used the plant so incautiously, as to be under the necessity of resorting to medical aid. This proves nothing but its activity. Shoepf says, in doses, from two scruples to a drachm, it operates as safely and as effectually as ipecacuanha. The roots should be collected in September.

#### ECONOMICAL USE.

It is said that the Indian-physic is often given to horses to mend their appetite,† and to remove their dyspeptic symptoms. Of this I know nothing myself, neither have I ever heard the manner in which it is administered to these animals.

\* Barton's Collections

† Barton's Collections.

## TABLE V.

Fig. 1. Represents a portion of *Gillenia trifoliata* of its natural size.

2. The root.

3. An outline of one of the lower leaves.

4. A flower separated from the peduncle.

5. The calix.

6. The same opened, shewing the stamens.

7. The pistil.

8. The same shewing the five styles.







GILLENIA STIPULACEA.

(Small flowered Indian-physic)



## GILLENIA STIPULACEA.

### SMALL-FLOWERED INDIAN-PHYSIC.

*GILLENIA stipulacea*. Willd. enum. plant. Pursh. fl. Am. Sep. vol. i. p. 343.

*GILLENIA stipulacea*. G. foliis ternatis lanceolatis inciso-serratis subæqualibus, stipulis foliaceis ovatis inciso-dentatis, floribus terminalibus laxè paniculatis 5-gynis, calice campanulato. (Willd. enum. et Pursh. fl. Am. sep. sub nomine *Spirææ stipulacæ*.)

#### DESCRIPTIO UBERIOR.

PLANTA simillima *Gillenia* trifoliata, tam radice quam habitu. Discrepantia notissima in stipulis foliaceis, et foliis inferis est. Caules plures, supra ramosi; colore fulvi aut rubicundi. Foliis ternatis; foliolis versus apicem lanceolatis, profunde inciso-serratis, plerumque, æqualibus; infra pinnatifidis, et tripartitis, colore fulvis. Stipulæ magnæ foliæ, ovata, acuminata, profunde serrata, basi inæquales. Serraturæ stipularum ramorum, irregulariter incisa. Serraturæ stipularum caulium, magis regulares. Floribus minores quam in *Gillenia trifoliata*. Pedunculis sub-setaciformibus longis. Calix simpliciter campanulatus, basi abrupte ternatus in quinque segmentibus divisus. Stamina et pistillum ac in *G. trifoliata*. Habitat in calcareis montibus Ohioensibus, et hinc ad Floridam usque; floret Junio. B.

I AM indebted to Mr. Nuttall for the pleasure I experience in presenting the medical world, with a figure of this interesting plant. The drawing has been made with much care, from fine specimens

received from him, which he collected in the vicinity of Cincinnati in Ohio. To botanists I trust the figure will be acceptable, since this second well characterised species, fully establishes the validity of Moenich's genus, *Gillenia*, and will justify me in restoring it. Neither Michaux nor Muhlenberg has noticed the plant; it was first described by Willdenow, whom Pursh has quoted. The late Professor Barton observes in his "Collections," speaking of the *Spiræa trifoliata*, "it is said that there grows in the state of Kentucky another species, which is still more valuable, as an emetic, than the *S. trifoliata*."\* The plant here figured, is, without doubt, the one alluded to by Dr. Barton. That this is the fact, sufficiently appears from the account Mr. Nuttall gives of it; and also from a rude sketch evidently of the *stipulacea*, now in my possession, made with a pen, by the late Rev. Dr. J. P. Campbell of Lexington, Kentucky, who has added the English name, Indian-physic, and called the plant *Spiræa trifoliata*. There is no doubt that the two species have been heretofore generally confounded under the specific appellation *trifoliata*, by the American botanists, and indiscriminately used by physicians in the country; though it would seem by Dr. Barton's remark, that the circumstance of another species existing in the Western States, had been communicated to him, with the assurance that this was the more valuable. Their strong resemblance to each other, may readily account for the indiscriminate use of both, under one common name.

*Gillenia stipulacea* has a root, according to Dr. Campbell's sketch, corroborated by Mr. Nuttall's description of it, precisely similar to the root of *G. trifoliata* represented in table 5, fig. 2; and what has been said of the root of that plant in the preceding article, may be applied to this one. It is of course perennial. Mr. Nuttall informs me that the whole plant is much taller, and more bushy than *G. trifoliata*; and sends up a vast number of stems from each root. The stems are brownish, branched at the top, and bear the flowers on long slender peduncles, in the form of a lax corymbose panicle. The upper leaves of the stems, and those of the branches, are ternate, lanceolate, cut-serrate, and nearly equal. Those approaching the bottom are deeply incised, and the segments cut-serrate; the lowest leaves are pinnatifid, and of a reddish brown colour. The stipules resemble leaves; are ovate, acuminate, deeply serrate, and unequal at the base. The serratures of the stipules of the branches, are more deeply and more irregularly cut than those of the cauline stipules. The flowers are smaller than those of *G. trifoliata*, and the calix is simply campanulate, being abruptly terminated at its union with the peduncle, and not inflated in the middle, nor attenuated at its base, like the calix of *G. trifoliata*.

The following account of the geographical range of this species of Indian-physic, I quote from a memorandum given me by Mr. Nuttall:



“ *Gillenia stipulacea* begins to appear south-westward on the high gravelly banks of the Ohio, soon after passing the confluence of the Muskingum. Here we no more meet with the *G. trifoliata* of the mountains and the eastern states, which it so much resembles, as to be almost uniformly confounded with it by most of the western botanists; continuing along the whole course of the Ohio we also find it, occupying the soils and situations of *G. trifoliata* throughout the Illinois, Indiana, and Louisiana, where I first became acquainted with it, in the neighbourhood of St. Louis. It does not, however, continue far up the Missouri. Its medicinal properties are, it may be presumed, very similar to those of the *G. trifoliata*; and it is probably the only species made use of by the western physicians.”

The *G. stipulacea*, according to the remarks on the sketch made by Dr. Campbell, is found in “Virginia, most abundantly in the woods west south-west of Parkersburg. Fifteen miles west of Marietta, on the Athens road, it commences, and abounds in company with a great abundance of *Columbo* ;” (I presume, *Frasera verticillata*,) “also at Bellville.”

*G. stipulacea* flowers in June.

The variety marked  $\beta$  *incisa* by Pursh, and which he describes “*foliis ternatis, foliolis pinnatifidis inciso-dentatis*,” I strongly suspect to be nothing more than the lower portions of our plant; and



I venture this opinion, from an accurate examination of the specimens from which I made the figure. No. 2, the lower portion of the plant, evidently fits the above description of the supposed variety. In all probability, the tendency of the leaves to become pinnatifid, occasionally extends further: and I should not doubt, that when there exists such amorphous shapes in the foliage, the whole plant would sometimes partake of the character of the lower leaves represented in the plate.

There is but little doubt that this plant is sufficiently hardy to endure transplanting; and it might readily be propagated, I should suppose, by a separation of the roots. It will be of some consequence, however, in cultivating it, to bear in mind its natural soil, as noticed in the preceding page. Both this, and the other species of *Gillenia*, are important medicinal plants; and as one or the other is found in almost every state in the union, physicians and apothecaries in the country, would find it to their advantage to collect it for use, as well as for sale in the shops.

#### MEDICAL PROPERTIES.

What has been said by Schoepf, Barton, and others who have quoted them, concerning the virtues and doses of *Spiræa trifoliata*, is applicable to the *G. stipulacea*, for reasons above given. The bark of the root is used; and the roots should be collected in September,

after the tops have died. The dose is the same as that of *G. trifoliata* ; though perhaps a smaller quantity would answer.

## TABLE VI.

Fig. 1. Represents the upper portion of *Gillenia stipulacea*.

2. The lower portion.

3. The calix.

4. The same opened, shewing the stamens.

5. A petal, with a view to shew its shape.

6. The Pistil, shewing the five styles.





Drawn from Nature by W. P. Barlow

Painted by J. H. R. Sargent & Co.

MAGNOLIA GLAUCA.

(Small Magnolia)



## MAGNOLIA GLAUCA.

### SMALL MAGNOLIA.

White-bay. Swamp-Sassafras. Beaver-tree. Castor-wood. Beaver-wood. Sweet-flowering Bay.  
Sweet-Magnolia. Sweet-bay. Elk-bark. Indian-bark. White Laurel. Gach-hach-gik  
of the Delaware Indians.

*Dutch.* Die eisengraue Magnolie ; Die meergrüne Magnolie ; Der Biberbaum.

*French.* Le Magnolia glauque ; Le Magnolier bleu ; Le Magnolier des marais ; L'arbre de Castor.

*Japan.* Kobus, Kobusi, Kobuks, Konsusi, Mitsmata, side kobasi, sini. *Variet.* Mockkwuren ; Fo no ki.

*German.* Graue Magnolia. (Willd.)

Ein 15 bis 20 Fuss hoher Strauch, in Virginien, Carolina, und andern Nördlichen theilen von America ;  
wächst auf feuchtem Boden, und an den Bächen ; der geruch der Blumen ist angenehm, aber so  
stark, das er sich auf ein viertel einer deutschen Meile erstrecken, und in der nähe Kopfweh  
erregen soll ; die Amerikaner legen den samen in rum, um ein magenstärkendes getränk davon  
zu erhalten ; die Rinde ist eine vorzügliche nahrung für die Biber, auch können selbige am  
leichtesten damit gefangen werden.

*MAGNOLIA glauca*, L. Sp. Pl. 755. Mill. Dict. n. 1. Du Roi Harbk. 1. p. 399. Wangenh. Amer. 60. t. 19.  
f. 46. Willd. Arb. 189.  $\alpha$  latifolia. Hort. Kew. 2. p. 251. ed. 2. vol. 3. p. 329. Hort. Cliff. 222.  
Gron. Virg. 61. Kalm. it. 2. p. 324. Dill. elth. 207. t. 168. f. 205. Catesby, Car. 1. p. 39. t. 39.  
Trew. ehr. t. 9. Pluk. alm. 379. t. 68. f. 4. Raj. Hist. 1690, et 1798. n. 4.  $\beta$  longifolia, Ait. l. c.  
Lin. Pf. Syst. 2. p. 77. Shoepf. Mat. Med. Am. p. 91. Muhl. Cat. Pl. Am. Sep. p. 53. Willd.  
Sp. Pl. p. 1256. Mich. Fl. Boreali-Am. vol. 1. p. 327. Pursh, Fl. Am. Sep. vol. 2. p. 381. Mich.  
fil. Hist. des Arbres Forest. vol. 3. p. 77. Barton's Collections, &c. part 1. p. 13, 47. part 2.  
p. 20. Barton's Prodr. Fl. Ph. p. 59. Nuttall, Gen. Am. Plants.

The *Magnolia glauca*,\* though in general only a small tree, sometimes attains the height of forty feet; and a diameter of twelve or fourteen inches. It is in the southern states, particularly the Carolinas, that it reaches this, its greatest elevation. Its most common height is from twenty to thirty feet, and in the vicinage of Philadelphia, on the Jersey side of the Delaware, it is a much lower tree, frequently flowering luxuriantly, when it has reached a height of five or six feet. Michaux f. says that this is also the case in the environs of New-York. I have no where seen it producing mature flowers at so humble a stature, as it does near Christiana, or as it is vulgarly called, Christine, on the road from Philadelphia to Baltimore; where I have observed clusters of this *Magnolia* in full flower, the largest individual among which, did not exceed four feet in height, and all of them much more deserving the appellation of bushes or shrubs than trees. The variation in the height of this species, is much influenced by local exposure and peculiarity of soil. I have seen trees of the greatest discrepancy in stature, but precisely alike in respect to the size of the leaves, flowers, and fruit, occupying almost the same ground. The difference in these instances, appeared merely owing to accidental situation; the small ones occupying the shady thickets, and the taller trees, the skirts of woods.

The trunk is covered with a smooth grayish bark; is tortuous, and much divided into divaricating branches. The wood is whitish,

\* This species appears to have been the first of its genus introduced into the gardens of England, having been cultivated by Bishop Compton, at Fulham, in 1688.

and very light. It is not, so far as I know, employed for any useful purpose. It is known sometimes by the name of castor-wood, or beaver-tree, which indicates that the beaver makes use of it in some way. In all probability it is employed by those sagacious animals, for posts, in the construction of their dykés, on account of its levity, which enables them to carry it to convenient places ; and from its softness, they can fell it without difficulty. The bark serves them for food during the winter, in times of scarcity, or the prevalence of severe weather or high floods, either of which confines them to their habitations.

The leaves of this tree are five or six inches long, and alternately disposed on the branches. They are of a long oval form, entire, thick, opaque, of a deep yellowish-green colour on their upper surface, and glaucous or bluish-white underneath. This agreeable green, relieved by the frequent presentation of the blue under side, exhibits a pleasing contrast in the leaves. Though at all times the foliage of this tree is comely, it appears to much more advantage during the inflorescence, from the harmony of colouring produced by the handsome cream-coloured flowers. The leaves fall in the Autumn of every year, and are reproduced in the Spring, at which season they are of a much lighter tone of colour than when further advanced.

The flowers are terminal, and solitary ; and about the size and shape of half a goose's egg. They are composed of many oval, con-



cave cream-coloured petals ; and exhale a subtle, bland, and to most persons, delicious odour. This renders them so universally agreeable, that at the period of their maturity, the women and children in the neighbourhood of Philadelphia and New-York, resort in great numbers to the swamps where they grow, and cull them to vend in the markets. The flowering twigs are put up in bunches, and sold for a cent or two cents each, and are eagerly purchased to decorate the mantles and chimney-places, in the houses of all ranks of people. The market-places are perfumed at this season, with the spicy scent for which these flowers are so remarkable. They are familiarly known in our market, by the name of *Magnolia*, and rarely by the appellation of *Small-Magnolia*. The emanation from the flowers is extremely penetrating. To some persons it is rather unpleasant, and to a few, insupportable ; producing uneasiness in the chest, and a tendency to fainting. The late Dr. Barton imputed to this odour, the power of increasing the pain of inflammatory gout, and occasioning an exacerbation of a diurnal fever. I cannot help suspecting this opinion to have been much influenced by the imagination, though I by no means deny these sweet flowers, a considerable degree of activity ; and perhaps in a close room they might produce slight headache in delicate persons, or even occasion fainting where idiosyncrasy exists in the constitution. I really believe, however, that these flowers are frequently accused of effects which they have had no share in producing : and the almost universal estimation in which they are held, sufficiently proves their general innocence.



The flowers are succeeded by little fleshy squamous cones, about an inch in length, and three-quarters of an inch in diameter. They are of a green colour, with occasionally a tinge of red, as represented in the plate. Each cone is composed of numerous cells, of about twelve or eighteen lines in length. They contain the seeds, which are of a bright scarlet colour. They force their way, when matured, by rupturing, longitudinally, the sides of their chambers, and thus escape. Previously to falling, they are suspended for some days, by a delicate white filamentous thread, which allows them to hang just below the base of the cone ; and by their beautiful contrast with the green scally strobile, produce a very pleasing effect. The seeds are about the size of a grain of Guinea-corn, irregularly roundish, and somewhat narrowed above.

There are two varieties of this tree. One called the broad-leaved Magnolia, with deciduous oval-oblong, and somewhat obtuse leaves ; the other denominated the long-leaved Magnolia, having persistent, elliptical, long and narrow leaves, acute at the apex and base. This last is a taller tree than the first variety, and the branches are more upright. Pursh says it is this variety which is known by the names of Swamp-Sassafras, Sweet-Bay, Swamp-Lau-rel, and Beaver-wood. It is the broad-leaved variety which is indigenous in our vicinity. The other is more common to the south. I have heard the Magnolias in the vicinity of this city, discriminated by the two appellations of Upland Magnolia, and Lowland Magnolia ; and it is currently believed, that the variety designated by the latter

epithet, will not bear transplanting into our gardens. I suspect the fancied difference is nothing more than one existing perhaps in the constitution (if I may be allowed such an expression) of the individual trees, arising from accidental situation in a dry or moist soil. Those found thriving in a comparatively dry spot, will in all probability stand the best chance of living after transplantation. The fact is, however, that this species of *Magnolia*, is shy of cultivation; and the frequent failure of attempts to cultivate it, while at the same time some individuals are occasionally found to thrive, induces people to seek for the cause, in a difference of species or in a variety.

The northernmost range of the Small *Magnolia*, is Cape Anne, in the State of Massachusetts, in latitude  $45^{\circ} 50'$ .\* It is pretty frequent in the lower part of New-Jersey, but more abundant further south. According to Michaux, f. this tree is the most common inhabitant of all the lower maritime parts of the middle states, as well as of Florida and the lower portion of Louisiana. It is never met with at any considerable distance in the interior; and it is not seen in the states of New-York, Pennsylvania, and Maryland, more than thirty or forty miles beyond the cities of New-York, Philadelphia, and Baltimore.† In the Carolinas and Georgia, its range is restricted to the geographical limits of the pines, as indicated by Michaux, who remarks, that he never remembers to have seen it in

\* Michaux, Arbres Forest.

† Idem.

the upper parts of these states, nor in those situated to the east of the mountains. In the lower portions of New-Jersey, and Pennsylvania, and more to the south, the *Magnolia glauca* is never seen except near marshes, bogs, and sphagnous swamps, which are for the greater portion of the year so full of water as to be impassable. Its common companions in these places are, *Vaccinium frondosum* and *Vaccinium amœnum*, or swamp whortleberry bushes; different species of *Andromeda* or bilberry, as *A. caliculata*, *A. Mariana* and *A. paniculata*; *Cupressus thyoides*, or white cedar, and *Vaccinium occycoccos*, or American cranberry. The swamps containing this last plant, will seldom be found destitute of the small *Magnolia*. In the great morasses bordering the rivers of the Carolinas and Georgia, this tree is seldom met with; while on the other hand, in those extensive marshes which reach in all directions across the pine forests, it constitutes, with the *Laurus Caroliniensis*, or red-bay, and the *Gordonia laysianthus*, or loblolly-bay, the body of trees which fills these swamps. The miry black soil of these places, which is superincumbent to a stratum of sand, is peculiarly suited to the growth of this tree.

In the cities and neighbourhood of Philadelphia and New-York, the *Magnolia glauca* is best known, as has already been hinted, by the names of *Magnolia* and *Small Magnolia*. It was formerly recognized by the appellations of swamp-sassafras, and beaver-wood, or beaver-tree; the latter of which was introduced by the Swedish



emigrants who first settled in this country. These names are now disused, and very properly. That of swamp-sassafras is not only incorrect and inappropriate, but leads to confusion. As it is the smallest tree of its genus, it seems to me, the best and most discriminating appellation, by which we can designate it, is Small Magnolia. It may not be amiss to notice, that the name of elk-bark arises from the circumstance of its being eaten by the Cervus Wapiti (of Barton) or American elk. The name of Indian bark, which is very rarely applied to this tree, arises in all probability from the use the Indians make of it in medicine.

#### MEDICAL PROPERTIES.

The *Magnolia glauca* belongs to the class of tonic bitters, and is far from being an unimportant article of this useful set of medicines. The bark of the roots of this tree have an aromatic odour and a bitter taste ; and a decoction is said to have been very useful in rheumatic affections.\* It is sometimes infused in brandy, by the peasantry, and they use the tincture in rheumatic affections. It is considered by them as a light sudorific. The inhabitants of the lower part of Jersey, are accustomed also to infuse the cones and the fruit, in rum and whiskey. The liquor of this infusion imbibes a very bitter taste, and is considered as a good prophylactic against

\* Barton's Collections. Shæpf's Mat. Med.



autumnal fevers. The bark of the tree and branches, forms, by pulverization, an agreeable aromatic tonic-bitter medicine, which has been used in intermittents. It is celebrated among the western Indians, as a remedy for rheumatism and fevers, and they resort to the river Kanhaway, where this *Magnolia* grows in great abundance, for the purpose of collecting vast quantities of the bark for these uses.\* A decoction proves gently cathartic, and terminates its operation by acting as a sudorific. A cold infusion and tincture of the bark, are much used in intermittents. Dr. Barton mentions, that in a case of inflammatory rheumatism it seemed to produce considerable relief, by its sudorific effect, after bloodletting. Shoepf says a decoction of the bark is useful in "diarrhoea, cough, phthisis, fever, hæmorrhoids, autumnal fevers, and internal pains; that a decoction of the young branches is effectually employed in catarrh and coryza; the seeds in cough and other affections of the breast; and finally, an ointment made of the carbonized wood and hog's-lard, is good for ulcers."† It will readily be perceived, from this detail of the virtues of our plant, that Shoepf was in some measure favourably biased by the prevalent high estimation in which this species of *Magnolia* was held; and he doubtless imputes more medical power to it, than the truth will justify. Yet if his encomiastic account shews on one hand, that he is too lavish of his commendation of its medical virtues, it proves on the other, that as an article of domestic medi-

\* Barton's Collections.

† Mat. Med. Am. p. 91

cine, it is very variously and very generally employed. This I have also other reasons to believe to be the case. Its almost universal use among the country people who dwell where it grows, as a remedy for autumnal fevers, and other affections, as already mentioned, evinces the probability that it is frequently found efficacious. Therefore it is, that I have assigned it a place in this work, and invite the attention of practitioners to the subject. The dose is about one drachm of the powdered root; and this quantity may be repeated three or four times in a day. The decoction or infusion, may be taken to any extent that the stomach will bear. The extracts may prove useful in medicine. That produced from the tincture of the bark of the twigs, is soft, dark-coloured, bitter, and gum-resinous. The tincture of the roots yields a soft, dark-coloured, resinous extract, of a bitter, pungent, and resinous taste. A decoction of the bark of the trunk, affords a hard, black, friable, gummy, resinous extract.

#### ECONOMICAL USE.

Like most vegetables endued with aromatic bitter properties, the Small Magnolia is employed in the preparation of morning bitters. The practice of taking what is called a morning dram, is too common among the laboring peasantry of our states; and among the different articles they use for this purpose, no one is

more likely to act healthfully than this. The cones and seeds are sometimes used ; but the seeds alone form the most elegant and pleasant bitter. They should be infused in good old spirit, or old rye-whiskey, and digested in the sun for a day or two. It is said that the root is used as a bait to catch the beaver, that animal being fond of it as food. The wood burns indifferently, and of course is never felled for this purpose. The tree may be propagated by seeds ; and it is said, I know not with what foundation, that those sent from this country to Europe, will not vegetate without being passed through the alimentary canal of the turkey.

## TABLE VII.

Fig. 1. Represents a flowering twig of the *Magnolia glauca*, of its natural size.

2. The cone, shewing two seeds which have escaped from their cells, and are suspended in the common way, previously to dropping.









Drawn from Nature by W.P.C. Barton

Tanner, Vallance Kearny & Co. N.Y.

LIRIODENDRON TULIPIFERA.

Tulip-tree

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### TULIP-TREE. POPLAR.

Poplar-tree; White Poplar; Yellow Poplar; White-wood; American Poplar. American Tulip-tree.

Tulip-bearing Poplar. The Old-wife's shirt. Sometimes in New-England, *Cypress-tree*.

Lyre tree of America. Len-nik-bi, of the Delaware, and Tse-u, or Tze-u\*  
of the Cheerake Indians.

*Deutsch.* Der Tulpinbaum.

*Holl.* Tulpboom.

*Swed.* Kanæträäd; Knuträd. Knutræ. *Kalm.*

*French.* Le Tulipier; L'arbre aux tulipes. Bois jaune.

*Portug.* Tulipeiro

*German.* Virginischer Tulpenbaum (Willd.)

Ein prächtiger baum, mit schönen tulpenartigen blumen, und schönem laube; in Nordamerika; wird auch seit langer zeit in Europäischen gärten gezogen; das holtz wird in Amerika zu allerley Schreinerarbeiten benutzt, wiewohl es den fehler hat, dass es sich bey trockenem wetter stark zusammenzieht, und bey seuchtem wetter wieder stark ausdehnt, und in fällen leicht ritzen bekommt; die wilden höhlen die stämme aus, und brauchen selbige zu ihren Kanoes.

*LIRIODENDRON tulipifera.* L. Sp. Plant. 755. Amoen. academ. 4. p. 517. Cold Noveb. 130. Hort. Cliff. 223. Hort. Ups. 154. Gron. Virg. 60. ed. n. 83. Roy. Lugdb. 494. Kalm. it. 2. p. 322. Trew. chr. t. 10. Buttr. cun. 229.\* Du Roi. harbk. 1. p. 374. Wangenh. Amer. 32. t. 13. f. 32. Willd.

\* *Tseu* is the Chinese name for *Musa Paradisiaca*, or Plantain tree. This is one of the coincidences in language, which is worthy the attention of the natural historian of America. There are many vestiges of the languages of the Chinese and Tartars, among the tribes of North American Indians. See Barton's "New Views," and Rogers's Inaug. Diss.



arb. 173. Willd. Sp. Plant. p. 1254. Mill. Dict. Herm. Lugdb. 612. t. 613. Pluk. Alm. 379. t. 117. f. 15. et t. 248. f. 7. Catesb. Car. 1. p. 48. t. 48. Raj. Hist. 1798. Du Ham. arb. tom. 2. t. 102. Pluk. Alm. 379. t. 68. f. 3. Houttuyn. Lin. Pfl. Syst. 2. p. 70. Bot. Mag. 275. Schmidt arb. 1. p. 48. Mich. Fl. Boreal. Am. vol. 1. p. 326. Mich. f. Arbres Forest. vol. 3. p. 202. Pursh, Flor. Am. Sep. vol. 2. p. 382. Muhl. Cat. Plant. Am. Sep. p. 53. Barton's Collections, &c. part 1, p. 14, 47. Coxe's Disp. ed. 3d p. 400. Thatcher's Disp. ed. 2. p. 257. Shoepf. Mat. Med. Am. p. 90. Art. Hort. Kew. ed. 2d vol. 3. p. 329. Barton's Prodr. Fl. Ph. p. 59. Nuttall, Gen. Am. Plants.

## LIRIODENDRON.

Gen. Plant. ed. Schreb. n. 941.

*Cal.* 3-phyllus. *Pet.* 9. *Samare* imbricatæ in strobilum. *Caps.* 1-2-spermæ, non dehiscentes.

Nat. Syst. Juss. *Magnolæ*. Classis XIII. Ordo XV.

LIRIODENDRON, L. \* *Tulipier*. Calix 3-phyllus corollæformis deciduus, bractea 2-phylla decidua cinctus. Petala 6 in campanam conniventia. Antheræ numerosæ longæ, filamentis utrinque adnatæ. Germina numerosa, in conum digesta; stigmata totidem globosa, stylis nullis. Capsulæ totidem, basi tumidæ 1-2-spermæ non dehiscentes, apice in squamam planam lanceolatam attenuatæ, supra axim subulatum dense imbricatæ deciduæ. *Arbores; folia magna, in L. Tulipifera 3-loba, lobo medio truncato; stipulæ latiores, tardius deciduæ; flores solitarii terminales, tulipæformes.*

Juss. Gen. Plant. p. 281. ed. 1789.

*Cal.* Perianth inferior, of three oblong, obtuse, concave, spreading, equal petal-like, deciduous leaves.

*Cor.* Bell-shaped, regular, of six oblong, obtuse, equal petals, concave at the base. *Stam.* Filaments numerous, inserted into a conical receptacle, shorter than the corolla, linear, erect, of two cells, bursting longitudinally at the outer side. *Pist.* Germens numerous, disposed in the form of a cone; styles none; stigmas all crowded together obtuse. *Peric.* Cases numerous, imbricated in the form of a cone; lanceolate compressed, leaf-like, triangular and tumid at the base, each of one cell, not bursting. *Seeds* two, ovate. *Ess. Cha.* Calix of three leaves. Petals six. Anthers bursting outwardly. Seed cases lanceolate, imbricated in the form of a cone.

Nat. Ord. Lin. *Coadunatæ*.

Classis *Polyandria*. Ordo *Polygynia*. Lin. Syst.



*LIRIODENDRON tulipifera*, foliis trilobis, lobo medio truncato. Mich. f.

*L. tulipifera*, foliis abscisso-truncatis 4-lobatis, calice triphylo. Willd. Sp. Pl. 2 p. 1254.

*α acutiloba*, lobis acutis acuminatisque. Mich. fl. Amer. 1. p. 326.

*β obtusiloba*, lobis, rotundato obtusissimis. Mich l. c.

Habitat, *α* a Canada ad Virginiam et a Carolina ad Floridam.

*β* in Pennsylvania. Mich. Fl. Am.

*α* Fertile grounds, Canada to Florida. Pursh.

*β* in Pennsylvania. Pursh.

SYNONYMA.

*TULIPIFERA Liriodendron.* Mill. Dict.

*TULIPIFERA arbor Virginiana.* Herm. Lugdb.

*TULIPIFERA Virginiana*, tripartito aceris folio : media lacinia velut abscissa. Pluk, &c.

*β TULIPIFERA Caroliniana*, foliis productioribus magis angulosis. Pluk. Alm.

*ARBOR Tulipifera Virginiana.* Raj. Catesb. et Clayton.

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Pharm. *Liriodendri* Radix, Cortex, Semina.

Qual. Rad. flavescens, acriuscula, fragilis.

Vis. Rad. febrifuga ; Cort. anthelmintica ; Sem. aperientia.

Usus : Cort. radice spiritui vini infusus : Febres intermittentes, Rheumatismus, Arthritis.

Folia contusa indigenæ fronti Cephalalgæ medendi causa imponunt—Unguentum e gemmis ad  
Inflammationem et Gangrænam. Shoepf. Mat. Med.

DESCRIPTIO UBERIOR.

*Arbor* exaltata magnifica, nonnunquam altitudine 100 pedales, et in circulo 30 ; plurimum vix ultra 70 seu 80 pedales proceritate. Ramis irregulariter contortis. Folia magna in lobis lateralis dissecta, basi velut cordata, et apice truncata. Petiolarum longitudine digiti. Flores numerosissimæ, magnæ, formosæ, sed odori omnino destitutæ. Calix duplex ; sistens involucrum proprii, et perianthemi. Involucrum foliolarum duarum : foliola triangulata et decidua. Perianthemum triphyllum, petaloi-

deum, oblongum, concavum et deciduum. Corolla 6-9 petala, campanulata; petalis oblongis, obtusis, spathulatis, flavo, rubro, et viride variegatis. Stamina numerosa longæ; filamentis linearis, corolla brevibus; antheræ linearæ filamentis adnatæ. Pistilla numerosa quasi strobili dispositis; stylus nullus; stigma globosa. Seminis numerosis in squama lanceolata terminatis, et omnis in conum imbricatis. Habitat a Canada ad Louisianam usque, et ultra. Florens et Maio et Junio.

Barton's Fl. Phil. MS.

THIS magnificent tree\* may be considered not only as the pride and ornament of the American forest, but as the most superb vegetable of the temperate zones. It is equally remarkable for its great height, its beautiful foliage, its superb flowers, and its handsome wood. The latter is used for an infinite variety of æconomical purposes.

The generic name is composed of two Greek words, λιλιον, or λιλειον, *a lily*, and δεινδρον, *a tree*, from the resemblance of the flowers to a lily or tulip.

In the Atlantic states, at some distance from the sea, the Tulip-tree not unfrequently attains the height of 70, 80, and 100 feet, and not uncommonly from 18 inches to three feet in diameter. According to Catesby, it sometimes measures 30 feet in circumference.

\* This tree "was cultivated by Bishop Compton, at Fulham, in 1668, and is now not unfrequent in England, though seldom flowering till an advanced age. We have however known it blossom when about 16 years old. The first which produced blossoms in this country, is said to have been at the Earl of Peterborough's, at Parson's Green, Fulham. There were several, early celebrated for their size and beauty, at Waltham Abbey, one of which remained lately, and perhaps still flourishes." Ency.

Michaux the elder, measured one tulip tree, which at five feet from the earth, was twenty-two feet six inches in circumference, and from 120 to 140 feet high. This account has since been corroborated by his son, to whose history of the poplar in his splendid work on our forest trees, I am much indebted in this article. It is, confessedly, the largest and thickest tree of North America with deciduous leaves, except the *Platanus occidentalis*, or Plane-tree. It rises with a straight or upright trunk, in general, to the height of more than 40 feet. The branches are not very numerous. Those of one summer's growth are of a shining blue colour, and are pithy ; those two seasons old, have a smooth brown bark. When broken, they emit a strong but rather agreeable odour. The bark of the young trees is tolerably smooth, but in old ones it is broken into deep furrows or fissures.

When the leaves have attained their full growth in the spring, they are generally from six to eight inches in length ; frequently, however, only from four to five long, and as many broad. They are supported by footstalks of a finger's length, and are disposed alternately on the stems. They are a little fleshy, of a glossy dark yellowish-green, and singularly formed, being somewhat heart-shaped at their base, horizontally truncated at the top, and notched in the middle down to the middle rib. They are divided into three lobes, those of the sides being rounded off or pointed. This re-

markable shape of the leaves, to which there is no exact resemblance in any other vegetable, will always distinguish the tree from all others, at first sight. Their upper surface is of a darker colour than the lower, and smooth; underneath, the veins are prominent and conspicuous. The leaves fall early in autumn. The buds of the ensuing year's shoots begin soon after to dilate, and they increase so rapidly, that by the end of December they are an inch long and half an inch broad.

The young leaves are enfolded in elliptical, obtuse, deciduous stipules.

The flowers are singularly beautiful, being variegated with yellow, orange, and lake-green; and are fully expanded, in common seasons, about the 20th of May. They are exceedingly numerous on a single tree, and are supported by peduncles which grow from the extremities of the branches. Catesby compares them to the flowers of the *Fritillaria imperialis*, or Crown imperial: but they have a more palpable resemblance to those of the tulip. This likeness, indeed, has given rise to the specific name. Though destitute of odour, their extreme beauty, together with the singular foliage, renders them, like the Small Magnolia, general favourites; and like them, they are brought in profusion to our markets, and vended in bunches at a cent or two cents each, for decorating our chimney-



hearths, &c. They are very generally purchased, by all sorts of people, for this purpose.

The calix is two-fold ; consisting of a proper involucrum of two leaflets, which are triangular, plane and deciduous ; and a triphylous perianth, the leaves of which open and fall back as the flower expands ; they are petal form, oblong, concave, and deciduous.

The corolla is bell-shaped, composed of six, seven, and sometimes more, oblong, obtuse, spathulated petals, spotted towards the top with green, and towards the claws with red, orange and yellow. They are open and variegated with different delicate tints, of which yellow predominates. Near the attachment of the petals to the receptacle, is the nectary, and the flowers secrete a vast quantity of honey. The bees are observed to resort to them in great numbers. It is calculated that the flowers of a single tree, may produce several gallons of excellent honey.

The stamens are numerous ; the filaments are linear, shorter than the corolla, and inserted into the receptacle. The anthers are linear, and connected longitudinally, to the sides of the filaments.

The pistils are numerous ; the germs are disposed in the form of a cone, destitute of a style, and the stigmas globose.

The fruit is formed of numerous long, narrow, thin scales, attached to a common axis, and imbricated in the form of a cone, varying from two to three inches in length, and pointed at the summit. When the cones are well filled, each one is composed of sixty or seventy seeds, only one-third part of which are capable of vegetation, and in certain seasons, not more than seven or eight.\*

It is observed also, that in the course of the first ten years after the tulip-tree has begun to produce fruit, almost the whole of the seeds are infertile; and that the largest trees with the highest branches are the best and most prolific.

There are two varieties of this tree as mentioned by Pursh; one having leaves with acute lobes, and the other having the lobes obtuse. One of these varieties is figured by Plukenet, in his *Phytographia*, t. 68. f. 3, and it differs much from the common kind, having four slight lobes instead of two great ones at each side of the leaf. It is remarked that in the gardens in England, the leaves occasionally have divided side lobes. There are, however, differences in the colour and quality of the wood; but whether either variety in the leaves, is constantly accompanied by one of these different kinds of wood, I am not prepared to say. Perhaps not. If I were

\* Mich. f. Arbres Forest.

disposed to venture an opinion on the subject, it would be, that the varieties in the leaves and in the colour and quality of the wood, are wholly independent of each other.

The *Liriodendron Tulipifera* in many parts of the United States, and particularly where it is the most abundant, is known by the name of Poplar. In New-York and New-Jersey, it is called *White-wood* and *Canoe-wood*. It is known by another and more appropriate name, though not so generally received—that of Tulip-tree, from the resemblance of its flowers to the tulip, when less expanded than represented in the plate. By this name, Mr. Michaux informs us, the tree is recognised every where in Europe where it has been introduced; and it were much to be wished, that the common but faulty name of Poplar could be disused, for the current adoption of one founded on so manifest a resemblance. The tree has, moreover, no characters in common with the poplars; consequently this name is calculated to create confusion. The French inhabitants of Louisiana and Canada, give it the name of *Yellow-wood*. It is also recognized in some parts of Pennsylvania by this appellation.

It is said that the milk of cows which have eaten of the buds, acquires a bitter and disagreeable taste.



This tree is the favourite haunt of the Oriole Baltimore, or Baltimore Oriole. It is found, according to Catesby, in almost every part of the northern continent of America, from the cape of Florida to New-England. To the northward of latitude 42 it is rather rare, and of inconsiderable stature. According to Michaux f. the lower extremity and north of Lake Champlain, which corresponds to the 45th degree of north latitude on one part, and the river Connecticut, which runs parallel to the 72d of longitude, on the other, may be considered as the natural limits of the Tulip-tree in this direction; and he informs us that it is not frequently met with in the forests, neither does it acquire a very great height, before leaving the river Hudson, which runs nearly two degrees more to the east, and below the 43d of latitude. In Connecticut and Vermont the cold seems, in some degree, to check its growth. In the eastern states, in the upper parts of Carolina and Georgia, but particularly in Kentucky, this tree is most abundant. It is comparatively much more rare in the lower and maritime parts of the two Carolinas and of Georgia, as well as in the two Floridas and the lower part of Louisiana. It grows on fertile ground.\*

\* The following is the account given of the method of raising the Tulip-tree in England:—  
“Plants of this kind may be raised by sowing the seeds, imported annually from America by the seed-dealers, in spring, either in the full ground, in beds of rich light earth, in a warm situation, placing the seed lengthwise, and covering it nearly an inch deep; or in pots or boxes, plunging them in a gentle hot-bed. When the young plants appear, they should be well screened from the sun, and have free air.



It is generally found mixed with other trees, as the different species of *Juglans*, the common hickory-nut, black-walnut, and butter-nut trees ; the *Gymnocladus Canadensis*, or Kentucky coffee-tree ; the *Cerasus Virginiana*, or Virginian cherry tree, &c. Yet sometimes it forms extensive woods by itself, as was observed by Michaux the elder, in travelling in Kentucky, on his route to Louisville.

They usually come up the same season ; when in the former method, water should be given them in dry weather ; and if the bed be covered over with hoops, to have occasional shade from the mid-day sun in scorching weather, it will be beneficial to the germination of the seeds and growth of the young plants ; continuing the waterings with care occasionally during the summer ; and in winter, sheltering them with mats in frosty weather to preserve their tops, which are sometimes a little tender the first year, and apt to suffer in this way.

“ When the plants are two years old, they should be set out in spring in nursery rows, two feet distant, and a foot asunder in the rows ; to remain a few years, till from three to six or eight feet high, when they may be planted where they are to remain.

“ But they are raised best in the open ground, where the beds are prepared of good mellow, rich earth, blended with old rotten cow-dung, sifting over the seeds fine turf-mould, mixed with fine sea or pit-sand. And they succeed best afterwards in a light soil, not too dry. They should have their roots and branches as little pruned as possible.

“ This is a plant that grows so large as to become a tree of the first magnitude in its native situation ; and it is generally known by the title of Poplar ; of late there have been great numbers raised from seeds in this country, so that they are become common in the nurseries, and there are many of the trees in different parts which annually produce flowers.

“ At Allerton Hall, the seat of Wm. Roscoe, Esq. there is a very large tree of this kind, which flowers well.

“ These trees are highly ornamental in large plantations, among others of similar growth ; and have a fine effect when planted out singly in large openings, kept in short grass, in pleasure grounds, or other situations, when they flower in any full manner.”

## CHEMICAL ANALYSIS.

We are indebted to Dr. Rogers, for the chemical analysis of the Tulip-tree, which he has given in his excellent Inaugural Dissertation on this tree.\* He informs us, that the distilled water produced from the bark, though not altogether insipid, possessed, only faintly, the peculiar flavour of the bark ; that it was somewhat acid in the fauces ; and that its odour was exceedingly agreeable, being considerably impregnated with the grateful aroma of the vegetable. It neither precipitated iron from its solutions, nor affected in the slightest manner, the blue colour of vegetable substances. Upon the application of a higher degree of heat to this distilled water, the liquor which came over, had an acid and very astringent taste. It changed blue vegetable substances red, and precipitated iron black ; consequently the result was, an essential oil, with aroma in great abundance ; and an acrid astringent acid.

Two pints of the cold watery infusion of the bark, afforded, by evaporation, three drachms of a dark-coloured gummi-resinous extract. During the early part of the evaporation, two scruples of pure fecula were deposited. On submitting three scruples of the extract

\* Un. Penn. 1802.

to the action of alcohol, nearly one scruple was dissolved; and the solution was somewhat bitter. An infusion of a pound of the coarse bark in a gallon of rain water was made, and submitted to chemical operations, for the detail of which the reader is referred to Dr. Rogers's Dissertation. Two pints of this infusion afforded by evaporation, three drachms of a dark-coloured gummi-resinous extract. During the early part of the evaporation, three scruples of pure fecula were deposited. Upon subjecting three scruples of the extract to the action of alcohol, filtering, &c. the following result took place :

Fecula, about 4 parts in 20

Gum 10

Gum mucous 5  $\frac{19}{20}$

Resin  $\frac{1}{20}$

A pound of the coarse powder of the bark was next infused in half a gallon of boiling water. At the end of twelve hours, this infusion was decanted, and an equal quantity of boiling water again affused on the bark. This was repeated four times. The first infusion was bitter, aromatic, and astringent. The second less bitter and aromatic; its astringency scarcely to be detected. The third was not in the least astringent, nor did it possess any perceptible bitterness. In the last affusion, the bark gave out neither bitterness nor astringency. A portion of the last-mentioned liquor was evaporated. It deposited a little feculent saccharine matter, which was nearly insoluble in cold water, but readily diffusable in hot. Re-



dissolved, and tested by the oxalic acid, it afforded a white precipitate, denoting the existence of lime. The alcohol of galls detected in it, the presence of iron, in a very small quantity. The several infusions were mixed and evaporated to the consistence of a firm extract, weighing three ounces and an half. Upon one ounce of this was poured six ounces of pure alcohol, which took up two drachms. A gum blended with fecula and sugar was left behind. The spirituous solution contained about eighteen grains of resin, and five scruples of gum mucous. The alcohol of galls detected iron, and the nitrate of silver, muriatic acid, in this solution. The gummy matter exhibited, as it dried, a great number of small shining crystals. A solution of these crystals was divided into several portions, and treated as follows: The nitrate of silver was added to one; it produced a precipitate, which upon filtration proved to be the muriate of silver. To another portion the tincture of litmus was added, and the mixture became red. The precipitate of lime produced, in the third, a blue tint which soon became greenish. Upon adding the tincture of galls, no change of colour was perceivable.

Result. Gum about 11 parts, or scruples in 24,

Gum mucous 6

Resin nearly 1

Fecula nearly 6

Muriatic acid, perhaps in combination,

Iron,

Calcareous earth,

A muriatic or essential salt.



Five parts only of gum mucous, had been taken up from the extract by the alcohol. A strong mucilage was formed of the residue, to which a large proportion of spirit was added. This dissolved one part more of the gum mucous, leaving the other principles curdled at the bottom of the vessel. The alcoholic tincture of the bark yielded

Gum mucous                      30 grains.

Resin                                16

A muriatic, or essential salt, 3.

The bark yielded, after ignition, potash, iron, and calcareous earth. Four pounds of the bark infused in a gallon of boiling water, and exposed to fermentation, yielded upon analysis, spirit of wine, vinegar, and oil. A decoction of four pounds of the recent bark, afforded five ounces of a black, or dark brown extract.

Two quarts of the tincture of the recent bark were analysed, and the following result obtained :

Impure gum, 3 drachms 10 grains,

Gum mucous, 5 drachms nearly,

Pure resin, 2 drachms, 2 scruples,

A muriatic or essential salt in very small quantity.

The distilled water from the bark of the root, was found to be limpid, odorous, nearly insipid on the tongue, and somewhat acrid on the fauces. The colour of the infusion from which it had been

drawn off, was pale yellow. An extract obtained by evaporating two pints of the infusion of the bark of the root, weighed half an ounce. To this, four ounces of spirit of wine were added. One drachm was dissolved. The portion taken up by the spirit consisted of one part resin and nine parts gum mucous ; the residuum was impure gum. The infusion made with boiling water, is a much stronger bitter, than that made with cold ; but not so intensely bitter as the spirituous tincture. The hot infusion differs from the cold in colour ; the latter is pale yellow ; the former a dark orange, inclining to red. The same difference of colour exists in the cold and hot infusions of the bark of the root.

The following statement is quoted from a paper by the late Dr. Rush, in the Transactions of the College of Physicians of Philadelphia :

“ 1. Two pounds of fresh root boiled in half a gallon of water, gives a strong bitter extract, equal, in my opinion, to the extract of gentian.

“ 2. Four ounces fresh bark infused, cut into small pieces, in a quart of proof spirit, give a tincture simply bitter, and of a peculiarly mild nature.

“ 3. One ounce of the dried bark in a pint of water, for twenty-four hours. The infusion was bitter.

“ 4. In endeavouring to reduce the dried bark to powder, I found it broke into small fibres, so that little powder was obtained from it. Upon toasting it a little over a slow fire, it was pulverised without difficulty. The powder was strongly impregnated with a bitter taste.”

#### MEDICAL PROPERTIES.

The Tulip-tree belongs, as has been noticed at the head of this article, to Jussieu's natural family of Magnoliæ ; and with the magnolias, it is arranged under Linnæus's natural order, Coadunatæ. We may therefore expect to find a similarity in the medical virtues of the Tulip-tree and the different species of Magnolia, particularly the *M. glauca*. This is the case. The bark of the Tulip-tree is considerably stimulant ; yet its properties do not entitle it to a place under the head of stimulants. It is more properly considered as a tonic, and for its roborant effects I notice it here. It sometimes acts as a sudorific, and hence its usefulness in chronic rheumatism. Its powerful diaphoretic effects are certainly produced by its stimulant power ; and therefore it is absolutely inadmissible, as a medicine in acute rheumatism. Those who employ it in the country will do well to bear this in mind. Like most diaphoretic medicines, it acts occasionally as a diuretic ; but though I think it necessary to mention this circumstance here, it is not intended to intimate



that the bark is at all useful for this virtue. Indeed it is to be regretted, that the secondary effects of medicines should have so much importance attached to them as frequently is the case. In dwelling upon these effects, writers are too apt to lose sight of the prominent virtues of the plants of which they treat. There is some slight degree of astringency also, united with a portion of bitterness and aroma. The bark of the root is simply tonic in its effects. It is a strong bitter, containing a small portion of a warm aromatic property, and an essential oil. It has long been employed by physicians in the United States as a tonic; and, united with the *Cornus florida*, or Dogwood, and the *Prinos verticillatus* or winter-berry, it has been highly commended for the cure of intermittents. It has even been said to be equal to the Peruvian bark. The late Dr. Rush mentions his having prescribed a large quantity of the powder of the root, "with as much satisfaction as any of the common bitters of the shops."\* It is said that this bitter has been found particularly beneficial in the last stage of dysentery.† The powdered root has been used combined with steel dust, in disorders of the stomach, with success.‡ Dr. Barton mentions that the bark is used in gout and rheumatism. I have already said, that it can only be safely administered in the chronic state of the last disease; and I confess myself sceptical of its curative power in the former. In a letter§ addressed

\* Transactions of the College of Physicians of Philadelphia, 1793.

† Thatcher's Dispensatory, 2d ed. p. 529, and Coxe's Disp. 3d ed. p. 400. Also Shoepf's Mat. Med. and Barton's Collections.

‡ Ibid.

§ Carey's American Museum, vol. 12.



to Governor Clayton of Delaware, in 1792, by Dr. J. T. Young, then of Philadelphia, he says, " I have prescribed the poplar bark in a variety of cases of the intermittent fever ; and can declare from experience, it is equally efficacious with the Peruvian bark, if properly administered. In the phthisis pulmonalis, attended with hectic fever, night sweats, and diarrhœa, when combined with laudanum, it has frequently abated these alarming and troublesome symptoms. I effectually cured a Mr. Kiser, fifty years of age, who was afflicted with a catarrh and dyspeptic symptoms for five years, which baffled the attempts of many physicians and the most celebrated remedies, by persevering in the use of the poplar bark for two weeks.

" I can assert from experience there is not in all the *Materia Medica*, a more certain, speedy, and effectual remedy in the hysteria, than the poplar bark, combined with a small quantity of laudanum. I have used no remedy in the cholera infantum, but the poplar, after cleansing the *primæ viæ*, for these two years. It appears to be an excellent vermifuge. I have never known it fail in a single case of worms which has come under my observation. I prescribed it to a child when convulsions had taken place. After taking a few doses, several hundreds of dead ascarides were discharged with the stools. The dose of the powder to an adult, is from a scruple to two drachms. It may likewise be used in tincture, infusion, or decoction ; but its virtues are always greatest when given in substance."

In answer to the foregoing, the Governor replies: "During the late war, the Peruvian bark was very scarce and dear. I was at that time engaged in considerable practice, and was under the necessity of seeking a substitute for the Peruvian bark. I conceived that the Poplar had more aromatic and bitter than the Peruvian, and less astringency. To correct and amend those qualities, I added to it nearly an equal quantity of the bark of the root of Dogwood (*Cornus florida* or Boxwood) and half the quantity of the inside bark of the white oak tree. This remedy I prescribed for several years, in every case in which I conceived the Peruvian bark necessary or proper, with at least equal if not superior success. I used it in every species of intermittent, gangrenes, mortifications, and in short in every case of debility. It remains to determine whether the additions of those barks to the poplar increases its virtues or not; this can only be done by accurate experiments in practice."

Mr. Lawson, in his History of North Carolina, speaks of a disease allied to syphilis, which occasionally destroys the nose, as existing among the savages of that country; and he tells us that the "juice of the Tulip-tree is used as the proper remedy for this distemper."

The bark of the root of the Tulip-tree can be given in extract, dissolved in water, in infusion and in decoction; but its virtues are most decided when administered in substance. Should it act on the

bowels, or should the stomach be too weak to bear it in this form, a few drops of laudanum should be combined with it. The dose of the bark for an adult, is from a scruple to two drachms. In Virginia the country people infuse equal parts of the bark of the roots of the Tulip-tree, and that of the trunk and stems of the *Cornus florida*, or Dogwood, in brandy: they suffer the infusion to digest for eight days, and give the tincture in the dose of two wine glasses a day, in intermittents.

The proper time for collecting the bark of the Tulip-tree for medical purposes, is in the month of January or February.

#### ÆCONOMICAL USES.

If the Tulip-tree is particularly admired for its splendid appearance, and is useful as a medicine, it is not less interesting from the various æconomical purposes to which its wood is applied. Perhaps no native tree is more serviceable, or more extensively used. The tree belongs to the class of light woods. Notwithstanding its levity, however, it possesses some counterbalancing advantages, which render it an important species of lumber. The true wood is nearly of a lemon colour, and is surrounded with white sap. The yellow colour of the heart is more or less deep; having sometimes a greenish hue, and not unfrequently shaded with violet. It is not so light



as the common species of poplar. Its grain is pretty fine and compact, admitting of an excellent polish, and easily worked. It is extremely durable, when well seasoned and deprived of the blea. I have heard of some uncommon instances of the durability of this wood. In altering lately in Lancaster, a log house, which had been built upwards of eighty years, the logs which were made of this poplar, being cut transversely, had all the appearance of new timber, although they had been exposed to the weather. It is said that the worms never attack this wood. In Virginia it is employed for the shafts of large mill-wheels; and it is said to be better suited to this purpose than any other kind of wood, because it withstands the perpetual moisture to which it is exposed in these situations. The great defect in the timber of this tree, is said to be, its liableness to be affected by the vicissitudes of the weather, when used in long beams out of doors. The easiness with which it is worked, particularly when quite dry, has caused it to be used in the construction of small cabinet-ware. It works freely in the lathe, and hence is much used for all kinds of turned utensils; such, for example, as bowls, trenchers, ladles, rolling-pins, and many other culinary vessels. The figured stamps on the butter brought to our markets, are made by carved blocks of this wood; it is also employed for dead-eyes, blocks, &c. and other articles in ship-chandlery. The trunks of the largest trees are often hollow, and are made into pettiaugers, and canoes, of sufficient capacity to hold many people. From its being appropriated to the latter purpose,



it takes the name of canoe-wood. The Indians esteem it the fittest kind of lumber for these boats. It is also used for coach pannels.

The nature of the soil is believed to have some influence on the shade of yellow, and upon the quality of the wood of this tree. Indeed this is very commonly remarked by those who are in the habit of working the wood. They distinguish the two kinds by the names of white poplar and yellow poplar; and say there are external signs by which these varieties can be designated; indeed I have heard some workmen pretend to know, whether the wood was white or yellow, previously to examining it. Not being satisfied with the answers of these people, it rests as yet, in my mind, very problematical, whether there are really any external discriminating characters. It is said however, that in general, the Tulip-trees which grow on elevated and gravelly situations, have white wood. Whether the reverse is uniformly the case, in those that grow in low and moist grounds, I am not prepared to say. The negroes and white inhabitants of Virginia, give strong decoctions of the root of the tree, to horses that are troubled with worms. This practice is said to be efficacious in removing them. And according to Dr. Barton, the Cheerakes and probably other Indians, administer an infusion of the bruised inner bark to these animals, when bitten by the *crotalus horridus*, or rattle-snake. The professor does not say with what effect this practice has been followed; and the fact is here mentioned only on his authority.

Michaux\* informs us, that some persons at Paris make a spirituous table liquor, possessing an agreeable taste and flavour, from the fresh bark and roots of the Tulip-tree, adding a sufficient quantity of sugar to render it palatable. Of the precise mode of making this beverage, he does not tell us ; but it is presumable the materials are brewed, and afterwards rendered more agreeable by the addition of sugar.

## TABLE VIII.

Fig. 1. Is a drawing of a flowering twig of the *Liriodendron Tulipifera*, of the natural size, having also a flower bud, as often happens.

2. A seed separated from the imbricated cone.

3. A reduced outline of the obtuse-lobed leaf mentioned in page 98.

\* Arbres Forest.





Fig. 1.



Fig. 6.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 2.

Fig. 3.

Fig. 4.

Drawn from Nature by W. P. C. Barton

Tanner Vallance, Kearny & Co. sc.

CORNUS SERICEA.

(Red-twig dogwood.)



## CORNUS SERICEA.

### SWAMP DOGWOOD.

Red-Willow. Rose-willow. New-England Dogwood. Female Dogwood. Silky-leaved Dogwood. American Red-rod Cornel :—Blue berried Dogwood; and Blue berried Cornus, in England.

*Cornus sericea*, L. Sp. Plant. 1. p. 663. Gron. Virg. ed. n. 20. Cold. Novebor. 17. Shœpf. Mat. Med. Am. p. 14. L'Herit. Corn. n. 6. t. 2. Willd. Arb. 75. Syst. Veg. 134. Mant. 199. Mill. Dict. n. 5. Du Roi. Harbk. 1. p. 165. Wangenh. Amer. 90. Ehrh. Beitr. 4. p. 15. Pluk. Alm. 121. t. 169. f. 3. Lin. Pfl. Syst. 1. p. 242. Willd. Sp. Pl. p. 663. Bart. Fl. Virg. Gron. p. 46. Pursh. Fl. Am. Sep. vol. 1. p. 108. Mich. Fl. Boreali-Am. vol. 1. p. 92. Walker's Inaug. Diss. Thatcher's Am. Disp. 2d ed. p. 200. Coxe's Am. Disp. ed. 3d. p. 286. Pharm. Mass. Med. Soc. p. 13. Barton's Collections, part 1. p. 12. part 2. p. 17-20. ed. 3d. part 1. p. 12. part 2. p. 17. Ait. Hort. Kew. ed. 2d. vol. 1. p. 262. Ray's Letters, 171. Jungh. Plant. Ic. cent. 1. t. 23. Barton's Elements of Botany, part 3. p. 16. Lin. Mantis. 199. Syst. Veg. 134. Gmelin, Syst. Nat. 11. p. 257. Forster. Fl. Am. Sept. p. 6. Marshall. Arbust. p. 36. Bartram's Travels, p. 321. Barton's Fl. Phil. p. 26. Walter's Carol. p. 88. Clayton, No. 23. Cold. Noveb. 17. Elliot's Sketch Fl. Car. et Georg. p. 207. Muhl. Cat. Am. Sep. p. 17. Pers. Syn. Plan. vol. 1. p. 143. Nuttall, Gen. Am. Plants, p. 98.

### CORNUS.

(For generic character, see *Cornus florida*, p. 43, with this addition, "Corculum of the seed long, involved in a carneous perisperm."—Nuttall.)

*Cornus sericea*, ramis patulis: ramulis lanuginosis, foliis ovatis, acuminatis, subtus ferrugineo-pubescentibus, cymis depressis lanuginosis. ♀ Willd. Sp. Plant. 1. p. 663.

*Cornus lanuginosa*, patula : ramulis lanuginosis : foliis ovalibus acuminatis, plerisque basi subrotundata obtusis, subtus manifeste pubescentibus : cymis confertioribus, lanuginosis. Obs. folia inferiora interdum subcordata. h Mich. Fl. Boreal. Am. vol. 1. p. 92.

## SYNONYMA.

*Cornus arborea*, cymis nudis, foliis subtus sericeis. Syst. Veg. et Mantis.

*C. Amomus*, arborea, foliis ovatis petiolatis, floribus corymbosis terminalibus. Mill. Dict. Du Roi. Harbk. Wangenh. Am. et Shoepf. Mat. Med. Am.

*C. fœmina*, floribus candidissimis umbellatim dispositis, baccis coeruleo-viridibus, ossiculo duro compresso biloculari. Cold. Noveb. et Gron. Virg.

*C. rubiginosa*. Ehrh. Beitr.

*C. Americana* sylvestris domesticæ similis, bacca coerulei coloris elegantissima. Pluk. Alm.

*C. sanguinea*. Forster, Fl. Am. Sep. Marshall. Arbust. and Bartram's Travels.

*C. sanguinea*: arborea, cymis nudis, ramis rectis subrubris, drupis cœruleis. Walt. Car.

Pharm. *Corni sericeae*, cortex.

Qual. Baccarum parenchyma viride amaro-adstringens.

Usus : folia Indigenæ Tabaco admiscunt. Ligni us. mechan. Shoepf. Mat. Med.

## DESCRIPTIO UBERIOR.

*Frutex biorgyalis*. Radix lignosa, ramosa, dilute grisea, odore quasi Glycyrrhizæ proximo : radiculis subfuscis. Caulis erectus, teres, ramosus, griseus. Rami oppositi, teretes, patuli, obscure purpurascetes. *Turiones* teretes, annulati, subimmaculati et atropurpurascetes, ut in *C. sanguinea*, juniores plus minusve pubescentes. Folia opposita, petiolata, ovata s. ovato-lanceolata, acuminata, integra, nervosa, subvenosa : costa nervisque infra elevatis, supra exaratis ; subtus villosa ferruginea inprimis ad nervos, nunc nudiuscula, patentia, plana, juniora lateribus subconniventia, 3 poll. long. 18. lin. lat. Petioli hinc teretes, inde unisulci, folio quater breviores, villosi, purpurascetes. Cymæ terminales, pedunculatæ, erectæ, depressæ, vix convexæ, tri-quadrupartitæ flore solitario intermedio, villosæ, 2 pol. lat. Flores pedicellati, horizontales, albi disco primum albo post anthesin fusco, odori, 4-5 lin. lat. Calix, *Perianthium* superum, monophyllum, quadridentatum, villosum : *enticulis* linearibus, acutis, patentibus ; persistens, vix 2 lin. lat. Corolla. *Petala* 4, epigyna, linearia, acuta, patentia, mox revoluta, coronam germinis cingentia, calice majora. Stamina. *Fila*

*menta* 4, epigyna, erecto-divergentia, corolla vix longiora, infra coronam germinis uti petala inserta. *Antheræ* oblongiusculæ, biloculares, incumbentes, peltatæ, luteæ. Pistillum. *Germen* inferum, globoso-urceolatum, villosum, coronatum *nectario* receptaculiformi, plano. *Stylus* filiformis, staminibus vix brevior. *Stigma* capitatum, pubescens. Pericarpium. *Drupe* bacciformis, globosa, calice umbilicata, basi excavata, carnosâ, demum aquosa, eleganter cærulea, intus alba, unilocularis, 3 lin. lat. Semen. *Nux* subrotunda, compressa, nervosa, bilocularis, 18 lin. lat.

L'Herit. Corn. 6.

THE *Cornus sericea* is a shrub seldom attaining more than 12 feet height. Its most common stature is from six to eight feet. The stems are numerous, straight, and covered with a shining reddish bark. The root is ligneous, branched, of a light grayish colour, and smells somewhat like liquorice-root; the radicles are reddish. The stem is erect, cylindrical, and branched. The branches are opposite, roundish, spreading, and of a dingy-purple colour. The young shoots are round, ringed, nearly without spots, and of a dark purple colour; the very young ones more or less pubescent. The leaves are opposite, petiolated, ovate, pointed, entire on their margins, nerved, and somewhat veined; having the middle rib and nerves projecting underneath, and sunk above. The under surface of the leaves, particularly near the costa and nerves, is covered with a dense, brownish, villous coat. The young leaves are doubled by the approximation of their sides; when full grown, they are plane, as represented in the largest leaf of the plate. They vary in size; but in general when mature, are three inches long and an inch and an half broad. The petioles are one-fourth the length of the leaves, round below, with a slight furrow above, villous, and purplish. The



flowers are borne in cymes, which are terminal, pedunculated, erect, flat above, or occasionally a little convex. The expanded flowers of each cyme are not very numerous. Calix monophyllous, four-toothed, villous; the teeth are linear, acute, spreading, persistent, about two lines broad. The corolla consists of four linear, acute, spreading petals, larger than the calix. *Stamens*; four erect diverging filaments, scarcely longer than the corolla; anthers peltate, oblong, and of a yellow colour. *Pistillum*; germen below, globose-pitcher-shaped, and villous. *Style* filiform, hardly shorter than the stamens. *Stigma* capitated and pubescent. The fruit consists of a collection of berry-formed globular, fleshy drupes, of a beautiful cœrulean blue colour. Each berry is excavated at the base, white within, 1-locular. *Seed*; a roundish, compressed, nerved, 2-celled nut.

The geographical range of the Swamp-Dogwood is extensive. It inhabits moist thickets, the borders of swamps, rivers, creeks, and rivulets. Its common companions are *Cephalanthus occidentalis*, *Viburnum dentatum*, *V. acerifolium*, *V. nudum*, *Cornus alba*, and *C. stricta*. The last-mentioned shrub it resembles exceedingly, and may easily be confounded with it, unless carefully examined. It flowers in June and July, and ripens its berries in September. In England, where it was cultivated before 1683, by Bishop Compton, it blooms as late as August.



**CHEMICAL ANALYSIS.**

Under this head, in the article on the *Cornus florida*, will be found Dr. Walker's analysis of the *Cornus sericea*. His comparative experiments, of the properties of the Peruvian bark and these two species of *Cornus*, are extremely interesting, and have produced results highly favourable to these articles, as medicines.

**MEDICAL PROPERTIES.**

The medicinal virtues of the Swamp-Dogwood, are the same as those of the common Dogwood; and both are allied in their effects, to the Peruvian bark. The *Cornus sericea* is therefore a stimulant and tonic, and may be used in powder, or in tincture with proof spirit. About a scruple and an half, and from that quantity to a drachm of the former, may be given at a dose, and repeated three or four times a day. The usual proportion of the spirituous tincture may be used. I am inclined to think that the

pulverized bark of the Swamp-Dogwood, is not so much used by country practitioners as that of the Dogwood, but it is certainly not less deserving the attention of physicians; particularly as the difficulty of procuring genuine Peruvian bark is well known.

#### ECONOMICAL USE.

The young stems and branches of this species of *Cornus* are very straight, and when recently cut, quite flexible. They are used in making baskets of a coarse kind, such as, the large fish-baskets used in the New Fish Market of Philadelphia; most of these are made of this shrub. They are worked up most easily when the bark is left on them. The bark is mixed with tobacco, and smoked by the Indians of our country. This fact is mentioned by Shoepf, and afterwards by Dr. Barton. The latter tells us that some of these savages of the Delaware stock, call the mixture Kin-ni-ha-nick. The bark of this *Cornus* is a favourite article of winter food of the Castor fiber, or American beaver. The ripe berries are greedily eaten by the common domestic fowl. From the bark of the more fibrous roots of this shrub, the Indians obtain a good scarlet colour, which they use in dyeing some parts of their dress. (Barton's Med. and Phys. Jour.)

TABLE IX.

Fig. 1. A portion of the *Cornus sericea*, taken in flower in the month of June.

2. A full grown flower, in front view.

3. A back view of the same.

4. The same without petals.

5. A petal.

6. A stamen shewing the oblong pelate anther.

7. The pistil.

8. The berries.

All the figures of the size of nature.









Drawn from Nature by W. L. Bur

Engraved by J. Kearns del.

SYMPLOCARPUS FOETIDA.

(*Eleocharis foetida* L.)

## SYMPLOCARPUS FÆTIDA.

### SKUNK-CABBAGE.

Swamp-Cabbage. Skunk-weed. Stinking Pothos. Polecat-weed. Itch-weed. Hellebore. Ellebore.  
Irish Cabbage. Poke. Cow-Collard. Polecat-Collard. Byorn-blad (or Bear's-leaf), and  
Byorn-retter (Bear's-foot), of the Swedes who settled in North America.  
Beerenwortel. Bonsemkruid, (according to Shoepf.)

Stinkende Zehrwurtz. Germ. (Willd.)

Anhängsel; *Holl.* Hangbast; Eine gattung pflanzen, deren arten in beyden Indien einheimisch sind; folgende sind zu bemerken: *a)* scandens; Appendix arborum *Rumph*; Das Anhängsel der Bäume; *Holl.* Aanhangzel der boomen; *Ceilan.* Potha; *Malab.* Ana-parua; *Cochinch.* Cay Ray leo; Mit den dickeren ranken steigt dies gewächs die bäume hinauf, und lässt die übrigen ranken herabhängen; trägt kleine, rothe, saftige, essbare beeren; Die Indianer nennen diese und andre Anhängsel der bäume: *Tapanawa*; *b)* acaulit; Planta innominata *Plum*; Auf Martinique, wo sie von den Einwohnern *Queue de rat* genannt wird; *c)* pinnata; Appendix laciniata *Rumph*.

*Praecordia*; *a)* Die sammtlichen Eingeweide der Brust; *Griech.* Phrenes; *b)* Die Gegend der Herzgrube, Die vordere Gegend des Oberleibes; *c)* Die Gegend unter den kurzen Rippen und dem schwerdförmigen Knorpel des Brustbeins. (Polyglot. Lexicon.)

*SYMPLOCARPUS fætida*, Salisbury. *Lin. Sp. Pl.* p. 1372. *Willd. Sp. Pl.* vol. 2. p. 288. *Shoepf. Mat. Med.* Am. p. 133. *Castiglioni, viagg.* 2. p. 238, 239. *Gmelin. Syst. Nat.* vol. 2. p. 596. *Thornt. Illus.* Mich. Fl. Boreal. Am. vol. 2. p. 186. *Cold. Noveb.* 214. *Lin. Amæn. II.* p. 362. *Catesb. Car.* II. t. 71. *Clayt. n.* 17. *Ait. Hort. Kew.* vol. 3. p. 319. ed. 2d. vol. 1. p. 268. *Bot. Mag.* 836. *Barton's Fl. Virg. Gron.* p. 60; *Elements of Botany*, part 3. p. 128, 130. *Pers. Syn. Pl.* vol. 1. p. 147.



Kalm. it. 3. p. 47. Gron. Virg. 141, et 186. Houttyun. Lin. Pfl. Syst. 10. p. 151. Pursh. Fl. Am. Sep. vol. 2. p. 398. Nuttall, Gen. Am. Plants, p. 105. Barton's Prodr. Fl. Ph. p. 26. Thatcher's Disp. ed. 2d. p. 150. Coxe's Disp. 3d. ed. p. 210.

## SYMPLOCARPUS.

(Salisbury.)

*Spatha* ventricose-ovate, acuminate. *Spadix* roundish, covered with hermaphrodite flowers. Calix deeply 4-parted, persistent, segments cucullate, truncate, becoming thick and spongy. *Petals* 0. *Style* pyramidal, 4-sided; *Stigma* simple, minute. *Seeds* solitary, immersed in the spongy receptacle.

Nuttall.

*Cal.* Communis, Spatha atro-purpurea, acuminata, ad basin, convoluta, citissime marcescens et contabescens. Partialis quadriphyllus, foliolis crassis succulentis, fuscis, brevibus, acuminatis, excavatis, inflexis, longitudine styli, persistentibus.

*Cor.* nulla. Spadix ovato-orbiculatus, pedunculatus, spatha dimidio brevior, staminibus foliolisque calicis undique obsitus, per maturitatem in limbum procumbens.

*Stam.* Filamenta quatuor, erecta, longitudine styli persistentia. Antheræ flavæ erectæ.

*Pist.* Germen rotundum infra stylum in spadice reconditum. Stylus fuscus, conicus. Stigma obtusum, vix perceptibile.

*Sem.* Bacca unica, carnosa, globosa, monosperma, extus fusca: in medulla fungosa spadicis plerumque octo vel novem inveniendæ. (Bart. Fl. Vir.)

*SYMPLOCARPUS fœtida*; acaulis; foliis ovatis cordatis, spadice subgloboso. Mich. Fl. Bor. Am. 2. p. 186.

"Stemless and subaquatic; leaves very large, strongly veined and entire, preceded by conspicuous sheathing stipules; scapes radical, appearing before the leaves; spatha discoloured; calix, style, and filaments persistent, enlarging with the spongy receptacle. Root verticillately fibrous, truncate. Leaves smooth, and green, ovate, cordate, enlarging, protected by large glaucous, spathulate-linguiform, veinless bractes. Spatha ovoid, roundish, cucullate, obliquely acuminate, point coarctate, plaited, involutely auriculate at the base, thick and spongy, livid purple, blotched and spotted with pale-green. Spadix pedunculate, simple, almost spherical. Bractes none. Flowers tessellately imbricate, adnate. Calix 4-parted, divided to the base, segments cucullate, compressed at the apex, emarginated, at length becoming very thick. Petals none. Stamina 4, opposite the divisions of the calix; filaments subulate, flat; anthers exerted, short, oblong-oval, 2-celled. Style thick, quadrangular, acuminate; stigma minute, pubescent, shorter than the stamens.



Germ immersed, 1-seeded. Seed naked, large, round, inclosed in the common receptacle. Coraculum small, involute, erect, umbilicately attached to a large, solid, carneous perisperm. Nuttall. Classis *Tetrandria*, Ordo *Monogynia*. Lin. Syst.

SYNONYMA.

**DRACONTIUM foetidum.** Willd. et Lin.

D. foliis subrotundis concavis. Cold. Noveb. Kalm. it. et Gron. Virg. 141.

D. foetidum, foliis subrotundis. Gmelin. Syst.

Calla aquatilis, odore allii vehemente praedita. Gron. Virg. 186.

Arum Americanum betæ folio. Catesb. Car.

Pothos Putorii. Barton's Fl. Virg. Gron.

Pothos foetida, foliis cordatis, spadice subgloboso. Ait. Hort. Kew. ed. 1. vol. 3. p. 319.

Pharm. *Dracontii Radix.*

Qual. Acris, alliacea, nauseosa.

Vis. Incidens, calefaciens, expectorans.

Usus: fol. contrita ad vulnera recentia et ulcera. Tussis consumptiva. Scorbutus et alii morbi

radix Ari officin. utilis. Colden. Shoepf. Mat. Med.

DESCRIPTIO UBERIOR.

Planta foetidissima acaulis, et sub floratione aphylla, seu eo tempore folia vix incloans. Radix perennis sistens radicularum verticillarum. Radiculæ cylindricæ longæ, albo et fusco annulato-variegatæ. Folia quæ post florationem crescunt, magna cordato-ovata sunt, subtus venis conspicue prominentibus; supra quasi exaratis. Costa succulenta infra prominens. In basi foliarum sunt bractæ spathulato-linguiformes, glaucæ. Spatha ovata, basi auriculato-attenuata, et apice obliquo-acuminata, depressa, cucullata, prorsus purpureo, flavo, et viride picta. Spadix pedunculatus simplex sub-globosus; floribus adnatis. Petala nulla. Calix 4-partitus, profunde divisus et persistens, segmentibus cucullatis, apice compressis et emarginatis. Stamina 4; filamentis subulatis persistentibus. Antheræ exsertæ, breves, oblongo-ovales, duarum loculorum sistens. Stylus crassus, quadran-

gultus, acuminatus persistens; stigma minimum staminibus breve. Semina nuda, magna, velut rotundata, purpureo et flavo variegata, in receptaculo spongioso immersa. Habitat a Canada ad Georgiam tenuis, in uliginosis et ad ripas rivulorum. Barton's Fl. Ph. MS.

Not many persons are unacquainted with the Skunk-Cabbage; though few perhaps, have noticed its singular inflorescence. The multitude of large, rank, fœtid leaves, which grow from a single root, together with the gregarious habit (if I may use such an expression) of the plant, attract the notice of every one who passes near the swamps and meadows where it grows; but at the period these are conspicuous, the flowers have disappeared.

I have followed Mr. Nuttall, in adopting the generic term *Symplocarpus*, imposed by Salisbury;\* but not having had access to the volume of the work containing the paper of this gentleman, I have had no opportunity of profiting by the characters on which it was founded.

*Symplocarpus fœtida* is a subaquatic plant, flowering and leafing from the root. The flowers appear before the leaves; or at least when these make their appearance at this time, they are closely convoluted, as represented in the plates. The leaves are preceded by coloured sheathing stipules; and about the end of April or beginning of May, are fully developed, when they are very large.

\* Linnean Transactions.

They are commonly twelve, fifteen, and eighteen inches long ; and nine or ten broad. I have seen them, in favourable situations, more than two feet long and twelve inches broad. They are oblong-ovate, heart-shaped at the base, smooth, strongly veined, and have a large succulent middle rib, projecting below. The root consists of a vast number of verticillate cylindrical thick fibres, many of which are near a fourth of an inch in diameter. They diverge from their point of cincture, and penetrate the earth or mire, to the depth of two feet, and sometimes more. The fibres are whitish, coloured with brownish-red rings.

The flowers are concealed in a singular spongy ovoid spathe, acuminate and depressed obliquely at the apex, and auriculated at the base ; variegated with spots of livid-purple, yellow, lake-green and red. These spathes may not be unaptly compared to some kinds of shells. Upon opening them, the flowers are found situated upon a globose pedunculated spadix. They are destitute of petals ; have a 4-parted calix, divided at the base. Segments hooded, flattened, and notched at the apex. There are four stamens, situated opposite to the divisions of the calix, having flat awl-shaped filaments, with short oblong anthers. The style is thick and four-sided ; stigma shorter than the stamens. The seeds are numerous, large, naked, irregularly roundish, and speckled with purple and yellow. They are immersed in a large spongy receptacle near to the surface, as shewn in the section (fig. 4. plate 10).



Every part of this curious plant, even the seeds, is strongly imbued with the peculiar alliaceous odour, which has given rise to the various vulgar names enumerated at the head of this article, expressive of the obnoxiousness of the plant. I think the odour emanating from the broken spathe and the bruised seeds, resembles exceedingly, the smell of assafœtida. The leaves have, perhaps, a more disagreeable smell than any other part of the plant. Their odour has been compared to that thrown off by the skunk or pole-cat; and, like that, it may be perceived at a considerable distance. The smell from the spathe and flowers, is pungent and very subtle. Experience leads me to believe they possess a great share of acidity; having been seized with a very violent inflammation of my eyes (for the first time in my life) which deprived me of the use of them for a month, by making the original drawings of these plates. The pungency of the plant was probably concentrated by the closeness of the room, in which many specimens were at the time shut up. In the open air, however, the Skunk-cabbage has certainly no pernicious effect; and the tales of its deadly influence on those who approach it, published by Dr. Thornton, in his gorgeous folio, have no better foundation than those of the Upos tree of the East.\*

\* It has been reserved for our countryman, Dr. Horsefield, to obliterate from the page of Natural History, the ridiculous fables concerning this tree, which the wickedness and credulity of the world had combined to make current.



According to the observations of Mr. Nuttall, "the seed of the *Symplocarpus* does not appear to possess any thing like a proper cotyledon, the embryo formed in the exact posture of the growing plant, (with the radical downwards), differs not from it in any particular but that of size. In place of a cotyledon there is a sheathing stipule similar to that which is ever after produced ; in fact it is viviparous. The embryo is seated in a small umbilical or hemispherical depression, in the upper end of what may be called a vitellus rather than a perisperm, judging from its functions ; this callus, or seminal tubercle, is roundish and turbinate, nearly as large as a filbert nut, very solid and carneous, possessing in a high degree the alliaceous fœtor of the grown plant ; the mutual point of attachment subsisting betwixt this body and the embryo is at first a minute and nearly central funiculus which enlarges and becomes more distinct during the progress of germination ; but what appears to be most singular in it, is the length of time which it continues attached to the growing plant, apparently inert at the base of the caudex for twelve or eighteen months."

The Skunk-cabbage is exclusively a native of America,\* and grows in boggy woods and meadows, in swamps, on the margins of brooks and rivulets, and other moist places. Extreme humidity and

\* It was introduced into England by Peter Collinson, Esq. in 1735. It flowers there in March and April, as it does in this country.

a rich soil, are necessary to its luxuriant growth ; and it appears also to delight in shade. It seldom appears sporadically. Where found at all, it is generally in abundance.

#### MEDICAL, PROPERTIES.

The sensible properties of *Symplocarpus foetida*, indicate its place in the *Materia Medica*. Every part of the plant is powerfully antispasmodic, and it is of course referable to that class of medicines. Hitherto the employment of this article has been too much limited ; for it seems entitled, from its virtues, to the general attention of physicians. Shoepf long ago mentioned the medicinal powers of the root of the Skunk-cabbage. He speaks of it as an expectorant, and as useful in phthisical coughs. At this time, too, this plant is much used for the same purpose in many parts of the United States ; and it is said that great alleviation of the cough is produced by the judicious use of the medicine. The Rev. Dr. Cutler, and others, have given it considerable reputation as a palliative in the paroxysms of asthma ; in which it is reputed to have afforded relief, when other means had failed. Thirty or forty grains of the dried pulverised roots, are recommended to be given during the paroxysm, and repeated as often as circumstances may require. After the fit has gone off, it is necessary to persevere in the use of the medicine ;

its continuance is recommended, till the patient be entirely cured. This practice is said to be imitated from that of the Indians, in the treatment of this complaint.\* Dr. Thatcher relates, on the testimony of a correspondent, one case of violent hysteria, in which two tea-spoonfulls of the powdered root, given in spirit and water, procured immediate relief. Musk, and other antispasmodics, had been ineffectually tried in this case. On repeating the use of the medicine, it afforded more lasting relief than any other remedy had given. The same writer mentions, on the authority of this correspondent, that when administered in cases of parturition, it relieves the spasms which frequently affect the abdominal muscles. The instances mentioned by Dr. Thatcher of the curative virtue of our plant in chronic and acute rheumatism, deserve further attention; but those dropsical cases hinted at, which he says were relieved by two tea-spoonfulls of the powdered root, are not, I think, of any importance. Indeed, I much doubt whether the cure of dropsy has in any instance been effected by this medicine; neither do its properties justify, for one moment, the belief. The seeds are said to afford more relief in asthmatic cases than the root; and this, I believe very probable, for they are remarkably active, pungent, and, as has before been mentioned, exhale the odour of assafœtida.

\* Thatcher's Disp.



The bruised leaves are frequently applied to ulcers and recent wounds, and it is said, with good effect. They are also used as an external application, in cutaneous affections ; and I have heard of the expressed juice being successfully applied to different species of herpes. The leaves are used in the country to dress blisters, with the view of promoting their discharge. For this purpose they are slightly bruised, by being laid on a flat board, and having a rolling-pin passed a few times over them. This is necessary to reduce the projecting middle rib, nerves, and veins, so as to enable every part of the leaf to come in contact with the surface of the blister. Colden recommends the Skunk-cabbage in scurvy, as well as in all other diseases in which the officinal wake-robin (*Arum maculatum*), has been found useful. I have had a good deal of experience in this disease ; and though I have never used the subject of this article in the treatment of it, I have no hesitation in declaring my disbelief of its usefulness in this distressing complaint. I have not had any experience with this plant for medical purposes, except with the leaves as above-mentioned, to dress blisters. For this purpose I can recommend them, where it is desirable to promote a large and speedy discharge, and no stimulating ointment is at hand. But it is only on the authority of those whom I have quoted, that I invite the notice of physicians to the plant, in the treatment of consumptive cough, asthma, and hysteria. In the latter complaints, its antispasmodic virtues seem to promise some good.





SYMPLOCARPUS var. *ANGUSTISPATHA*.

(Purple-flowered cabbage.)

## SYMPLOCARPUS $\beta$ ANGUSTISPATHA.

### NARROW SPATHED SKUNK-CABBAGE.

(*Symplocarpus* Nat. Syst. Juss. *Aroideæ*.)

*SYMPLOCARPUS*  $\beta$  *angustispatha*: spatha lanceolata, apice lineari-attenuata; spadice globoso longe pedunculato. Stipulis et foliis inchoatis, purpureo striatis. B.

#### DESCRIPTIO UBERIOR.

Planta simillima *Symplocarpo* *fætida*, et forsan vix ultra varietatem, perquam spatha discrepans. Spatha lanceolata, in longum acumen terminens; colore atro-purpurea non maculata. Spadix longe pedunculatus, minor quam in altera specie, et in colore et forma non idem. Folia inchoata virido et purpureo striata; stipulis virido-purpureis. Habitat cum *S. fætida*, idem tempore florens. B.

THE above variety of the common Skunk-cabbage, I discovered near this city; and I figured the only two specimens found. One of these is represented in the plate, and one of the spathes of the other. It is needless perhaps to remark, that it has an exceedingly close resemblance to the *S. fætida*. It differs, however, in so many particulars, that I have no hesitation in giving it to the public as a decided variety. It yet remains to be proved by future examinations, whether it can form a legitimate species.



The whole plant is more slender than the common one. The root is somewhat smaller. The spathe is long, narrow, purple, entirely without specks or spots, and of a beautiful shining dark purple colour. The spathes of the specimen not here figured, were narrower than those of plate 11; and the smallest of them is separated in fig. 8, plate 11. The young convoluted leaves and stipules are deeply tinged with purple, and somewhat striped with this hue. The spadix is supported by a very long peduncle; is half the size of that in the *S. fœtida*, and of a light umber colour; in the common one it has an ochroleucous hue. The flowers are also smaller than in the Skunk-cabbage. The fruit I have not yet seen.

#### MEDICAL PROPERTIES.

This variety has the same rank, alliaceous odour as the common Skunk-cabbage; and its sensible properties are the same. Consequently its medicinal virtues will be found not to differ.

#### TABLE X.

Fig. 1. Is a representation of *Symplocarpus fœtida* in flower. The drawing made from a specimen procured in the first week of April.



Fig. 2. The spadix covered with flowers, brought into view, by cutting away the spathe.

3. A flower magnified, shewing the calix, stamens, and pistil.

4. The fruit divided in half, longitudinally, bringing into view the seeds immersed in the spongy receptacle.

TABLE XI.

Fig. 5. The external half of the globose pericarp, or spongy receptacle.

6. A seed.

7. The variety described, page 133, and there called *Symplocarpus*  $\beta$  *angustispatha*.

8. A spathe severed from the other specimen of this variety which was found with fig. 7.

9. The spadix of fig. 7. covered with flowers.

All the figures of the natural size except fig. 3, plate 10, which, as already mentioned, is magnified.









CASSIA MARILANDICA.

(*Cassia* L.)

## CASSIA MARILANDICA.

### AMERICAN SENNA.

Wild-Senna. Maryland-Cassia. Senna.

*Marilandische Cassie.* Germ. (Willd.)

*Cassia.* *Greek.* Kassia, kasic.

*Deutsch.* Cassia, Kassien.

*Hol.* Kassie.

*Dan.* Cassie.

*Schwed.* Cassie.

*Engl.* The Cassia.

*French.* La Casse, le Cassier.

*Ital. &c.* Cassia.

CASSIA Marilandica, L. Hort. Cliff. 159. Hort. Upsal. 100. Roy. Lugdb. 467. Mill. Dict. n. 6. Kniph. cent. 12. n. 22. Du Roi Harbk. 1. p. 133. Willd. Arb. 54. Dill. Elth. 351. t. 260. f. 339. Gron. Virg. 65. Mart. cent. 23. t. 23. Houttuyn Lin. Pfl. Syst. 3. p. 520. Willd. Plant. tom. 2. part 1. p. 524. Mich. Fl. Boreali-Am. vol. 1. p. 261. Pursh, Fl. Am. Sep. vol. 1. p. 306. Muhl. Cat. Pl. Am. Sep. p. 42. Barton's Prodr. Fl. Ph. p. 49. Barton's Collections. 3d ed. part 1. p. 31. Coxe's Am. Disp. 3d ed. p. 248. Shoepf. Mat. Med. Am. p. 63. Thatcher's Disp. 2d ed. p. 177. Pers. Syn. Pl. vol. 1. p. 458. Ait. Hort. Kew. 2d ed. vol. 3. p. 29. Chapman's Elem. Thera. &c. vol. 1. p. 209.

## CASSIA.

Gen. Plant. edit. Schreb. n. 700.

*Cal.* 5-phyllus. *Petala* 5. *Antheræ* supremæ 3, steriles; infimæ 3, rostratæ. *Lomentum*. (Willd.)*Cal.* 5-phyllus. *Pet.* 5. subæqualia. *Anth.* supremæ 3, steriles, infimæ 3. rostratæ, in filamentis longioribus incurvis. *Legumen*. membranaceum 2-valve. (Pursh.)Nat. Syst. Jus. *Leguminosæ*. Classis XIV. Ordo XI.

CASSIA, T. L. \* Senna, T. \* *Casse*, *Sene*. Calix 5-partitus coloratus deciduus. Petala 5, quorum inferiora majora. Stamina filamenta 10 distincta, 3 inferiora longiora antheris longis arcuatis, 4 lateralia antheris brevibus, 3 superiora breviora antheris effætis. Germen pedunculatum. Legumen oblongum 2-valve dissepimentis transversis multiloculare loculis 1-spermis, nunc planum membranaceum siccum, latius & breve, aut longum & angustius, nunc subcylindricum lignosum intus sæpe pulposum vix dehiscens. Arbusculæ aut suffrutices; folia pinnata, opposita 1-12-juga aut rarius multijuga, petiolo communi ad basim aut et inter foliola sæpe glanduloso; flores axillares spicati aut rarius subsolitarii. An ratione fructus dividendum genus in Sennam legumine membranaceo & Cassiam legumine pulposo?

Juss. Gen. Plant. p. 348. ed. 1789.

*Cal.* Perianth five-leaved, (five-cleft, Gärt. Juss.) lax, concave, coloured, deciduous. *Cor.* Petals five, roundish, concave; lower ones more distant, more spreading, larger. *Stam.* Filaments ten, declined; the three inferior ones longer; three inferior anthers very large, arcuate, beaked, opening at the tip; three lateral ones without a beak; three upper ones very small, barren. *Pist.* Germ somewhat cylindrical, long, pedicelled; style very short; stigma obtuse, ascending. *Peric.* Legume oblong, with transverse partitions. *Seeds* several, roundish, affixed to the upper suture.

*Calix* five-leaved. *Petals* five; three upper anthers barren; three lower ones beaked. *Fruit* a legume.

Obs. Tournefort divided the genus into two; cassia with oblong legumes, entire partitions, and generally pulpy cells; and senna, with gibbous, inflexed, and very thin partitions. Gärtner has adopted his two genera with the following essential characters:

Senna. *Calix* five-cleft, deciduous. *Cor.* Petals five, lower ones larger. *Stamens* ten, separate; three upper anthers barren, the rest fertile: three lower ones arcuate. *Legume* membranous, many-celled. *Seeds* albuminous. *Embryo* straight.

Cassia. *Flower* as in senna. *Legume* long, cylindrical, woody, not opening by valves, many celled; cells filled with pulp. *Seeds* albuminous; albumen with a chink on each side. *Embryo* straight.

Nat. Ord. Lin. *Lomentaceæ*.Classis *Dicandria*. Ordo *Monogynia*.

Ency.



CASSIA Marilandica. C. foliis octojugis ovato-oblongis aequalibus, glandula baseos petiolorum. Willd.

C. glabriuscula; foliis 8-jugis lanceolato-oblongis mucronatis subæqualibus, glandula petiolari obovata, racemis axillaribus et paniculato-terminalibus, leguminibus linearibus arcuatis glabris. Pursh.

C Marilandica. Herbacea, glabriuscula: foliis 8-jugis, sublanceolato-oblongis, utrinque obtusiusculis; glandula petiolari obovata: spicis axillaribus et paniculato-terminalibus: antheris atro-fuscis.

Obs. Foliola mucronata. Legumen angusto-lineare, arcuatum, glabrum. Mich. Fl. Bor.

SYNONYMA.

CASSIA mimosae foliis, siliqua hirsuta. Dill. Elth.

C. foliis octo sæpius parium ovato-oblongis æqualibus, glandula supra basin petiolorum. Gron. Virg.

DESCRIPTIO UBERIOR.

PLANTA herbacea 3, aut 4 pedalum proceritate; undique præter basin petiolum et fructum, glabriuscula.

Radix perennis, lignea, contorta, nigra; nunc horizontalis, nunc in terra profunde immersa; radiculis pluribus, extus atris intra flavis. Caules multi, erecti, teretes; ramis subhorizontalibus tanquam cum cardine articulatis. Folia 8-juga, ovato-oblonga, velut mucronata. Glandula petiolari obovata. Flores in racemis axillaribus siti. Petala obovata, 5, quorum inferiora majora. Stamina filamenta 10. Germen pedunculatum albido-villosum. Legumen lineari-longum arcuatum sparse hirsutum. Habitat in arenosis locis prope rivos, a Novo-Eboraco ad Carolinam, Augusto florens.

Barton's Fl. Ph. MS.

THE generic name of this plant is of Asiatic origin, and was brought into Greece along with the commercial article which it denoted, by the Phœnician merchants.\* The specific appellation was

\* "It is the קציעה, *ketsieh*, of the Hebrews and other orientals. In the books of the Old Testament it occurs, indeed, only once, and that in the plural number. "Thou lovest righteousness and hatest wickedness: therefore God, thy God, hath anointed thee with the oil of gladness above thy fellows. All thy garments smell of myrrh and



given by Linnæus, in conformity with a common custom, of which later discoveries have shewn the impropriety: that of naming a new

aloes, and cassia.”—Ps. xlv. 7, 8. This psalm, we apprehend, may be referred without hesitation to the reign of Solomon. The plural termination was probably adopted by the Hebrews, on account of the small detached pieces into which the bark was usually divided when it came into the hands of the merchants; but the seventy, in conformity with the general usage of Greek writers, give it in the singular number, and with a single  $\sigma$ , which appears to be the original orthography. But though the Phœnicians communicated the name to the Greeks, they did not themselves adopt that by which this precious commodity was known in its native climate. In the Hebrew language, of which the Syro-Phœnician is only a different dialect, the verb  $\text{קצץ}$  signifies to strip any thing of its covering; and thence was naturally applied in a substantive form to denote the bark of a tree separated from the trunk: and the high value which was set on the aromatic bark brought from the remotest regions of the then known earth, might as naturally cause it to be called bark by way of eminence; in the same manner as another kind of bark is thus distinguished in modern times. The word cassia occurs in two other passages of our common translation of the Old Testament: Exod. xxx. 24. Ezek. xxvii. 19; but in these the original  $\text{קרה}$ , which the septuagint in Exodus render *κρη*, in Ezekiel appear not to have had in their copies. It was probably somewhat different from cassia; but from its connection in the book of Exodus with myrrh, cinnamon, and sweet calamus, appears to have come from the same countries, and to have possessed similar properties.

“ This oriental aromatic is the cassia of modern cookery, but not of modern botany. We must therefore refer for its character and history to the article *laurus*, under which genus it is now placed.

“ The naturalist has often reason to lament that travellers and merchants have given the name of one thing long known to another recently discovered, on account of a real or fancied resemblance in a single particular, although in every other respect it is entirely different. Such has been the fate of cassia. The Romans used the word with

species of any genus, from the particular place whence it was sent to him. Though the first specimens of *Cassia Marilandica* were transmitted to Linnæus from the state of Maryland, the plant is now known to be extremely common in almost every state of the Union, south and westward of New-York. Inappropriate as the specific name is, however, it still does, and always ought to stand, unchanged.

considerable latitude. When Virgil, extolling the simple fare of the husbandman, says,

“Nec casia liquidi corrumpitur usus olivi,”

he cannot be supposed to speak of the cassia which he mentions in his second eclogue, as interwoven with the flowers of the violet, poppy, narcissus, and sweet smelling anise in the garland made for Alexis by the naiad. In the former passage he undoubtedly alludes to the aromatic bark which the luxurious citizens of Rome infused in their table and culinary oil to give it a grateful smell and flavour. In the latter he must have intended some odoriferous herb or shrub which is a native of Italy; but by what name it is now known, cannot easily be determined.

“In the middle ages, the Arabian and Greek physicians, as appears from the writings of Avicenna and Myrepsus, acknowledged two kinds of cassia; one cassia aromatica, a native of India, the cassia of the ancients; the other, cassia solutiva, a native of Egypt, totally different in its general appearance, botanical characters, and medical qualities; and which appears to have been honoured with the same name as that which from time immemorial had distinguished the precious oriental spice, merely on account of its pleasant smell; for we are informed by Alpinus, that when he was in Egypt, in the latter part of the sixteenth century, the natives took great delight in walking early in the morning in the spring season near plantations of this kind of cassia, and regaling themselves with the fragrance of its flowers. To this species, and its numerous congeners, the term cassia, as a generic appellation, is confined by modern botanists.” Ency.

The wild senna\* is a beautiful plant. It is about three or four feet high, with stems rising erectly from the root. The root is perennial, mostly horizontal, but sometimes perpendicular; contorted, irregularly shaped, woody, black, and covered with a multitude of fibres also of a deep black colour externally, and yellow within. The stems many, often simple, herbaceous, cylindrical, either entirely smooth, or furnished with a few hairs. The leaves are alternate, rather long, green above, and pale underneath. Leaflets in eight pairs, ovate-oblong, equal, and yellow on the margin; a gland at the base of the petioles. Flowers bright orange-yellow, in short axillary racemes, on the upper part of the stem. Legumes three or four inches long, a little curved, mucronate, bordered with conspicuous joints, and a few scattered reddish hairs.

This plant is pretty common from New-York to Carolina; and where met with, is generally abundant. Though it sometimes is found remote from water, it will always, I think, appear on examination, that such situations are exsiccated swamps or meadows. It delights in a low, moist, gravelly or sandy soil, preferring the borders of rivers, creeks, and such watery places, to any other situations; and flowers from the last of June to the last of August.

\* The *Cassia Marilandica* was introduced into England in 1723, by Peter Collinson, Esq. It flowers there in August and October.



## MEDICAL PROPERTIES.

Wild senna is now well known to be a valuable cathartic of the milder class. It is little, if at all inferior, to the senna of the shops;\* and is doubtless one of the most important of our indigenous medicines. Professor Hewson of Philadelphia, informed me that he had used it occasionally, and with the same good effect as

\* It appears by the researches of Mon. Hippolite Nectoux, that botanists and writers on the *Materia Medica*, have hitherto been mistaken in supposing the true senna of the shops, to be the leaves and follicles of the *Cassia senna* of Linnæus. This intelligent and industrious inquirer instituted, in Egypt, a series of investigations respecting the senna, which resulted in the singular fact, that *Cassia senna*, L. which had always been considered as the true senna, is in reality a weed, with which the real senna is adulterated in Egypt, to augment the quantity produced by the annual growth of the other two plants which constitute the senna. As the work of Mons. Nectoux is rare in this country;\* and the facts so satisfactorily stated in it, very interesting, I shall here subjoin a brief summary of his discoveries.

Mr. Nectoux informs us that his first object after landing in Egypt, was the senna. The commonly received name of Alexandrian Senna, led him to the expectation of finding it in the vicinity of the city whence the drug takes its name. He did not, however, find it, after a considerable search, either at Alexandria or at Rosetta, Damietta, or Cairo. He informs us that not a stalk of senna grows in the Delta; and that the name Alexandrian, is given, and currently adopted, merely because that city is the *entrepot* whence it is exported to Europe. At Cairo he saw the process of preparing the senna

\* The only two copies of this splendid work I believe, which have come to this country, were presented by Mr. Michaux, of Paris; the one to Dr. Hosack, and the other to myself.

common senna; and I have had some experience with it in my own practice. At the Marine hospital of the Navy-yard, I have for

for the European market. It consists in separating the leaves and follicles from the stalks, and packing them in round bales, weighing in gross weight from 560 to 640 lbs. Here he first observed that there were different kinds of pods, and that their characters indicated two different species of plants. While at Cairo, a specimen of the growing senna was brought to him by a native, who found it at Bassa-Tine, a village situated at the entrance of the valley of Egarement, and called it Sena-belledy. *Belledy* is the term by which the Egyptians designate their indigenous plants, in contradistinction to exotics, which they denominate *araby*. In passing through the provinces of Bene-Souef, Fayoum, Minie, Siout, Girgai, and as far as Carnak, he did not meet with any of the species of senna. Around the ruins of Carnak and Luxor he observed some few stalks of the same species of senna that he had received from Bassa-Tine. On entering the valley it was found in great abundance, particularly on the right bank of the Nile, opposite to Hermuntis. The *Fellachs* or peasants, called it also sena-belledy, or wild senna. It grows naturally with holcus sorghum. The fellachs after gathering in the holcus, make two crops of senna, in which, however, they take no great care. At Esnech, Mr. Nectoux caused a number of bales of senna to be opened. On inspecting them, he was much surprised to find some of them contained only a species of cynanchum, different from any he had before seen. It was called sena-mekky, senna of Mecque. The cheick who superintended the *entrepot* at Esnech, told him it was also called arguel; that it possessed the same properties as the senna, and that the guellaps, or slave-merchants, who brought it from the country of Barabras, sold it for senna. By paying a trifle, Mr. Nectoux obtained permission to inspect a number of senna bales, brought in a caravan which arrived at Darao. In some of them he found senna with large beans, which was called by the merchants *sena guebelly*, senna of the mountains; others contained only arguel; and some a mixture of the two plants. When the *sena-belledy* was shewn to them, they recognized it by that name, and added, that it was *wild* or *weed* senna; and that it occasioned whisks or gripes. They said, as did those at Esnech,

some months past substituted it for Alexandrian senna, and frequently employed it. I have also, in a single instance, used it in my

that the senna of the mountains and the *arguel*, were found growing three days' ride from Sienne. Mr. Nectoux sought fruitlessly at this place, for some few plants of senna and arguel; but he only discovered the senna of Thebaïd. At the island of Phille he offered rewards to those who should shew him the senna; but here, as at Sienne, his exertions proved of no avail. He found only a single stalk of the plant, in the environs of a ruined village. Its appearance was different from that of the senna-belledy, which grew by its side. Upon comparing it with the imperfect specimens he procured at Sienne, and finding the stems and leaves similar, he was confirmed in his discovery of a new plant. After further researches he learned, that the neighbourhood of Sienne, produced *senna* and *arguel* in abundance. He met with it in the valley of Darao, and in the vallies among the mountains situated a short distance from the city. He constantly remarked that the antelopes, &c. which browsed on other plants, never touched the arguel or senna. Mr. Nectoux visited Nubia, which is known in Egypt by the name of the valley or country of Barabras. It is a narrow valley through which the Nile flows. The view is confined on the two sides, alternately, by a lofty chain of granitic mountains. Senna and arguel are the chief productions of this country. They are not the objects of particular cultivation, but grow naturally on the sides of the hills and in the ravines. Each person has the privilege of gathering what grows in his district. Two crops are annually made, the productiveness of which depends on the duration of the rains which fall periodically every year. The first and most fruitful is gathered at the termination of the rains, which commence at the summer solstice, and end in August or the beginning of September. The second crop is gathered in April, and is small. No expense attends the preparation of these plants, which consists in cutting and spreading them on the rocks to dry. This process in that warm climate only occupies a single day. The senna and arguel are put up in small bales, weighing about a quintal each, and are conveyed by camels to Sienne and Darao. They are sold for 300 to 340 parats (eleven or twelve francs) each. They are afterwards carried to the farmer general, at



family. In all these trials I have had reason to confirm the high character of the plant, which it has long maintained. The leaves alone

Cairo, who purchases them at eleven or twelve pataques (thirty to thirty-three francs) and sold by him to the European factors for thirty or thirty-three pataques (one hundred and six francs) the quintal. Mr. Nectoux was informed on good authority, that the produce of the two crops varies annually, from seven to eleven hundred quintals; one-third of which is arguel. The demand from Europe is generally from fourteen to fifteen-hundred quintals; and never less than twelve. The Egyptian merchants therefore mix from three to four hundred quintals of the *sena-belledy*, or wild senna (cassia senna of Linnæus) with that brought from Nubia. This adulteration is made at the *entrepôts* of Kene, D'Esnech, Darao, and Sienne; around which places the senna-belledy grows abundantly. Mr. Nectoux concludes by inviting the attention of his government to the introduction and culture of senna (cassia lanceolata of Lamark), and arguel (*cynanchum oleæfolium* of Nectoux), in its colonies, with the view to avoid this adulteration.

The following are the descriptions given by Mr. Nectoux of the three different plants known in commerce as senna :

“ The senna-belledy, or wild senna, is the cassia senna of Linnæus, *cassia foliis sex-jugis subovatis, petiolis eglandulatis*. La Casse d'Italie, Lamark, *Encyclopedie Method. Botan.* p. 646; *Sena Italica, sive foliis obtusis*, C. B. p. 397; Tourn. 618, Rai. Hist. 1747; Moris. Hist. 2. p. 200, sec. 2. tab. 24, fig. 2; *sena*, Dod. pempt. 361. lob. ic. p. 88; *Sena Italica foliis quinque jugatis cordatis obtusis*. Mill. Dict. No. 2; *cassia*, Burman. *Flora Indica*, p. 96. tab. 23. f. 2.

“ The *sena-guebelly* or *sena-mekky*, mountain-senna, is the *cassia lanceolata* Lamark. *Encyclopedie Method. Bot.* p. 646; *cassia lanceolata, foliis quinque jugis*; Forskall *Flora Egyptiaca*, p. 85, No. 58; *Sena-Alexandrina sive foliis acutis*, Bauh. pin. 397. Moris, Hist. 2. pl. 201 sec. 2. tab. 24. f. i.; Tourn. 608; Rai. Hist. 1742; Mill. Dict. No. 2; *Sena B.* 377; *Sena orientalis*, Tabern. Herb. p. 2. f. 220.

“ Linnæus has confounded this plant with Italian senna.

have commonly been used ; but I have made use of the dried leaves and follicles, carefully rejecting the leaf-stalks, and beg leave to recommend this manner of employing the plant for medical purposes. I believe the best time for collecting it would be when the pods are ripe, which is about the last of August.

The affinity of wild senna to two of the articles which constitute the senna of commerce, renders it probable, that these foreign

“ The arguel, called also Sena-Mekky, though very little is found in the senna which is brought into Egypt by way of Suez, is not described by any author. It is a new species, to which Mr. Nectoux has given the name of *Cynanchum Oleæfolium*. It has all the characters of the genus *Cynanchum*, but possesses the same medicinal properties as the true senna, and some even say it is preferable as a medicine. It is easily distinguished by its stalk, which supports itself ; by its oval-lanceolated leaves, covered with long down, as is also its stem and calices ; and by its long dichomotous peduncles, bearing at the end of their division, five or six small flowers disposed in an umbel, surrounded with narrow leaflets. It is not climbing as the greater part of the species of this genus are. Its branches are single, flexible, in considerable numbers, and spreading from the stem.”

In the manuscript of Lyppi on the Egyptian plants, there is one designated under the name of *Asclepias Africana foliis Oleæ*. It is not accompanied with either a description or drawing ; neither does it exist in any herbal. There is of course, some doubt respecting the identity of this and the plant described by Mr. Nectoux.

It has been stated erroneously, that the follicles or beans of senna are not used in Egypt. Mr. Nectoux states that they are found in all the shops of the Egyptian druggists, both mixed with and separate from the leaves.

I have found all the leaves and follicles, as figured by Nectoux, in the senna of our shops, and exhibited them to my class in verification of his observations. The follicles of *Cynanchum* appear to be most rare.

plants might be cultivated without difficulty, and with great profit, in our southern states. I have understood that the Alexandrian senna has been cultivated in North Carolina with success.

Since it appears that we do not obtain pure senna from Egypt ; and that the adulterating plant, or *Cassiasenna* is much inferior to our native species, it cannot be doubted, that the cultivation of the *Cassia lanceolata*, and the *Cynanchum Oleæfolium*, and mixing them with the *Cassia Marilandica*, would afford a much purer senna than we now use ; and at one-fourth the cost of the imported article. These facts and hints are certainly not unworthy the attention of our southern planters and physicians.

TABLE XII.

- Fig. 1. Represents the upper portion of a stalk of the *Cassia Marilandica* of the natural size.
2. A side view of a flower.
  3. A front view of the same.
  4. The same, the petals being removed ; shewing the calix, stamens, and pistil.
  5. A stamen.
  6. The pistil.
  7. The seed pod. The legumes are often more bow-shaped than this one.







GERANIUM NAUTILATUM.

(Sp. Pl. 1795. 1796.)

## GERANIUM MACULATUM.

### SPOTTED CRANE'S-BILL.

Common Crane's-bill. Alum-root. Racine a Becquet. Sometimes in Lancaster-county (Penn.)  
and in Kentucky, Crow-foot.

### GENUS GERANIUM.

*Germ.* Der Storchschnabel ; das Schnabel kraut. Gefleckter Storchschnabel.

*Dutch.* Oijevaarsbek ; Kraanhals.

*Dan.* Storkenæb.

*Swed.* Storknäf.

*Engl.* The crane's bill.

*Fran.* Le geranium ; la geraine ; bec de grue, ou de cicogne.

*Ital.* Geranio ; becco di gru.

*Span.* Jerenio ; pico de ciguenä ; hierba del pico ; pico de grulla ; aguja ; (pamplilla).

*Port.* Geranio ; agulha ; Bico de grou ; bico de cégonha.

*Russ.* Schuratelinei nos.

*Pol.* Pychawiec, zorawie nozki.

*Bohem.* Capjnusek, capu nos.

*Ukrain.* Karvamozenzel.

*Hung.* Daru orru fu.

GERANIUM Maculatum. L. Sp. Pl. 955. Gron. Virg. 101. Burm. Geran. 17. Mill. Dict. n. 14. Cavan.  
Diss. 4. p. 213. t. 86. f. 2. Dill. Elth. 158. t. 131. f. 159. Houttuyn Lin. Pfl. Syst. 8. p. 415. Mich.  
Fl. Boreali-Am vol. 2. p. 38. Bigelow. Med. Bot. p. 84. Muhl. Cat. Pl. Am. Sep. p. 62. Pursh.



Fl. Am. Sep. vol. 2. p. 448. Barton's Collections, &c. part 1. p. 8, 45. part 2. p. 1. Barton's Prodr. Fl. Ph. p. 69. Nuttall, Gen. Am. Plants. Coxe's Am. Disp. ed. 3d. p. 343. Thatcher's Disp. ed. 2d. p. 224. Ait. Hort. Kew. ed. 2d. vol. 4. p. 188. Willd. Sp. Plant. tom. 3. part 1. p. 705.

## GERANIUM. (Tourn. L'her. Vent.)

Gen. Plant. ed. Schreb. n. 1118.

*Cal.* 5-phyllus. *Cor.* 5-petala regularis. *Nect.* glandulæ 5-melliferæ, basi longiorum filamentorum adnatæ. *Ariilli* 5-monospermi aristati ad basin receptaculi rostrati; aristis nudis simplicibus (nec spiralibus nec barbatis).

Nat. Syst. Juss. *Gerania*. Classis XIII. Ordo XIII.

Geraniceæ, St. Hillaire.

GERANIUM, T. L. \* *Pelargonium*, Burm. \* *Geranion*, *Geraine*. Calix 5-phyllus aut 5-partitus. Petala 5 æqualia aut in-æqualia. Stamina filamenta 10, basi in urceolum aut tubum coalita, nunc omnia antherifera, nunc quædam sterilia. Germen modo basi 5-glandulosum, modo pedicello insidens fistuloso intrâ florem hinc hianti. Fructus dehiscens in capsulas 5, ovatas aut basi acutas, 1-2-spermas, aristatas aristis stylo persistenti adnatis, a basi ad apicem dehiscentibus una cum capsulis; coreolum lobis a medio reflexis. Herbæ aut suffrutices; folia alterna, aut opposita; pedunculi florum 1-2-flori aut multiflori. Corolla in Europæis speciebus regularis admittit calicem 5-phyllum aut 5-partitum, germen basi 5-glandulosum, glandulas petalis alternas, caulem herbaceum, folia sæpius opposita & pedunculos axillares, in 1-2-floris stamina omnia fertilia & capsulas ovatas aristis supra revolutis, in multifloris stamina 5 sterilia & capsulas basi acutas aristis tortilibus. Corolla in Africanis irregularis quasi papilionacea, petalis 2 superioribus erecto-reflexis, intra calicem 5-partitum non polyphyllum, profert germen non basi glandulosum, staminum filamenta 7 aut pauciora antherifera cæteraque sterilia, capsulas basi acutas aristis tortilibus barbatis, pedicellum floris hinc fistuloso-cavum intra petala & extra stamina apertum, caulem sæpe suffrutescentem, folia plerumque alterna, pedunculos sæpius multifloros & foliis oppositos. Numerosissimas D. Cavanilles in accurata Monographia nitidis expressas iconibus recensuit species generis in posterum dividendi, Africanis ad *Pelargonium* Burmanni rejectis. Ex ipso congener *Grietum* L. 5-stylum, præterea simillimum Europæis: an idem posthac restituendum?

Juss. Gen. Plant. ed. 1789. p. 268.

Nat. Ord. Lin. *Grinales*.

Class *Monadelphica*. Ordo *Decandria*. Lin. Syst.

**GEN. CH.** *Cal.* Perianth inferior, of five ovate, acute, concave, permanent leaves. *Cor.* regular, of five large, obovate or obcordate, equal, spreading petals. Nectary five glands at the base of the germen. alternate with the petals. *Stam.* Filaments 10, awl-shaped, recurved, united at the base into a small cup, five alternate ones longest, all shorter than the petals; anthers oblong, versatile, five of them occasionally abortive. *Pist.* Germen superior, with five furrows, beaked; style central. awl-shaped, longer than the stamens, permanent; stigmas five, oblong, reflexed. *Peric.* Capsules five, aggregate, membranous, globose, lateral, separating at their inside, each attached upwards to a long, linear, flat, pointed, rigid, smooth awn, at length elastically recurved, adhering by its point to the summit of the style. *Seeds* solitary, lateral, roundish, their surfaces smooth or dotted.

**Ess. CH.** Calix of five leaves. Petals five. Nectariferous glands five. Fruit beaked, of five aggregate capsules, each tipped with a long, recurved, naked awn.

**Obs.** This genus, as above defined, contains only the *Gerania columbina* of Linnæus, or what are commonly called European Geraniums, or Crane's-bills, bearing but one or two flowers on a stalk. (See *Erodium*) Thus it is adopted by Willdenow, who has 39 species, 13 of which are natives of Britain. They are tolerably naturally distributed into three sections. Ency.

**GERANIUM** maculatum, erectum, retrorsum pubescens, caule dichotomo, foliis oppositis 3-5 partitis incisîs, summis sessilibus, pedunculis elongatis bifloris, petalis obovatis. Willd. Sp. pl. 3. p. 705.

**GERANIUM** maculatum, perenne, retrorsum pubens: caulibus erectis, opposite diphyllis: foliis 3-5 partitis: pedunculis elongatis, bifloris: petalis obovalibus. Mich. Fl. Boreali-Am. vol. 2. p. 38.

#### SYNONYMA.

**GERANIUM** Novboracense, Coelln Amœn. Acad. vol. 4. p. 522.

**GERANIUM** caule erecto herbaceo, foliis oppositis quinquepartitis incisîs, summis sessilibus, petalis integerrimis rotundatis. Cavan. Diss.

**GERANIUM** batrachioides Americanum maculatum floribus obsolete cœruleis. Dillenius elth.

#### DESCRIPTIO UBERIOR.

**HERBA** tota hirsuta. Radix gibbosa, horizontalis, perennis. Caules erecti sub-bipedales, furcati seu dichotomi, pilis deflexis. Folia profunde quinquepartita, undique pilosa, lobis irregulariter incisæ.

dentatis; radicalia longè petiolata; caulinea nonnunquam sessilia. Stipulæ membranaceæ. Pedunculi elongati biflores. Flores magni purpureo-rosei petalis obovatis non emarginatis. Calices sparse pilosi margine ciliati et abruptè aristati. Capsulæ hirsutæ, pilis patentibus. Habitat in sylvis umbrosis, et sepibus; etiam inter segetes, et ad margines agrorum; florens Junio et Julio.

Barton's Fl. Phil. MS.

THE generic term *Geranium*, is derived from the Greek word *γέρανον*, a crane, from the fancied resemblance of its permanent style, to a crane's bill. The old genus contained a very extensive assemblage of plants. L'Heritier divided it into three different genera, viz. *Erodium*, *Pelargonium*, and *Geranium*, the latter characterised by the marks, mentioned at the head of this article, under the generic character.

Of the North American species of the genus, the *maculatum* is much the most common. This extremely pretty plant is much more worthy of cultivation than many of the exotic species of the same genus, so universally nurtured in our green-houses. The root is perennial, irregularly gibbous, and horizontal; and commonly of the size represented in the plate. It is brownish, mottled with green externally, and greenish-white within, becoming brittle or friable upon siccation; and then easily pulverisable in the mortar. From the root arise generally one stem and from four to eight root-leaves, supported by petioles from eight to ten inches in length. The stem is erect, terete; and this, as well as its divisions and peduncles, is of a sage-green colour, and thickly beset with reflexed



hairs. At the height of six, eight, or ten inches from the ground, the stem becomes forked; and at the point of division is garnished by a pair of large leaves supported on petioles, less than half the length of those of the radical leaves. The leaves at the fork are commonly much the largest, and are frequently inverted from their upright position either by a reflexion of the petiole, or a convolution of it, as represented in the plate. Those situated on the upper part of the stem, are furnished either with short petioles, or are entirely sessile. The peduncles arise from the dichotomous divisions of the stem, and uniformly bear two flowers, on short pedicels. The first fork or division of the stem, is furnished with four lanceolate, ciliate, membranaceous stipules, of a salmon colour. The upper stipules are linear, but also ciliated and of the same colour. The calix consists of five oval-lanceolate, ribbed, cuspidated segments, plumously ciliated on their outermost margins, and membranaceous on the other edges—occasionally three of the segments are ciliated on either edge, and the other two have membranaceous margins. Petals five in number, obovate and without notches at the apex. Stamens always ten, having glands at the base, and oblong convex deciduous anthers of a purple colour. Germ egg-shaped—style the length of the stamens at first, but afterwards becoming elongated, and persistent—stigmas five. The capsule contains five seeds, which, when matured, are scattered by the elasticity of the awns arrayed along the permanent style. The plant is extremely common in many parts of the United States, having a very

extensive geographical range. It is abundant in the neighbourhood of this city, and I have found it equally common in Jersey, the counties of Lancaster and York, in Pennsylvania, and in the neighbourhood of Baltimore. But it will be found plentifully from Canada to the southern boundary of the United States. It inhabits copices, hedges, the borders of damp woods, and the skirts of fields, generally preferring low grounds, though I have seen it on high hills. Its common height is from twelve to eighteen inches : but in very favourable situations it grows to the stature of two and an half feet, and is then one of the most beautiful of our native plants.

#### MEDICAL PROPERTIES.

The medicinal virtues of *Geranium maculatum*, reside, exclusively, in the root, and these entitle the plant to be ranged under the head of Astringents, in the *Materia Medica*. After saying thus much, it may seem unnecessary to enter into a detail of the particular diseases in which it has been recommended. The encomiastic and sometimes ill founded accounts of the medical virtues of a plant, which may have become the particular object of the favour or partiality of an individual physician, too frequently savour of empiricism ; and in fact the exaggerated reports of the specific powers of medicines have not only done much harm, but never fail to bring into actual disrepute, the subject which they were designed

to offer to favourable notice. To no one of our native plants is this remark more applicable, and of none more true, than the subject of this article. Not content with substantiating the claim which our native species of *Geranium* has to a rank in the *Materia Medica*, as a powerful astringent, those physicians and others who have been particularly led to the employment of it in the cure of diseases, have assigned to it specific powers, which it certainly does not possess. Having thus premised my opinion of the real and reputed virtues of this plant, I shall proceed to state the different diseases in which it has been recommended.

In the fourth volume of the *Amœnitates Academicæ*, Coelln first mentioned the medical virtues of this plant; and he there tells us, on the authority of Cadwallader Colden, that it was used in dysenteries. “*Geranium Nov-eboracense (maculatum); decoctum radicis hujus plantæ ad dysenteriam nostratibus in usu est.\**” And Shoepf says: “*Radix leniter adstringens, vulneraria habetur et ad Dysenteriam laudatur.*”

The practice of using a decoction of the *Geranium* in dysentery, is still very common among the inhabitants of our western mountains; and this is done upon a knowledge of its astringency, for it is in that part of our country that the plant is known familiarly by the name of Alum-root; and a decoction in milk was recommended by

\* *Specifica Canadensium*, No. 30.



the late Professor Barton, in cholera infantum. Whether the practice of using the astringent decoction in dysentery, can ever be admissible, is, I think, extremely doubtful; and whether it has ever actually done good in that complaint, is not less problematical. It is not unlikely that in diarrhœa it may be useful: and this disease is not unfrequently called by the vulgar, dysentery. In all probability the powers ascribed to it of curing this last complaint, have been shewn by its exhibition in such cases of common diarrhœa as are cured by the use of astringents. Of its use in cholera infantum I know nothing, not having ever employed it in that complaint. But I am informed by Dr. Eberle, who is a native of, and has practised in, the county of Lancaster, that the common people of that county use it extensively in the treatment of diarrhœa and cholera infantum. And he tells me that he has himself used it in some cases of looseness of the bowels with as much efficacy as other astringents. The western Indians are said to esteem it as the most effectual of all their remedies for syphilis; and here too, probably, the mild local disease which we know can be cured by astringents, has been confounded under the name of the constitutional disease. An aqueous infusion of the root has been used as an injection for gonorrhœa, and probably with success. I have used it in some few cases last summer, and I must confess with as much success as is usual with astringents; though I ought not to conceal, that in those cases, (as in all that come under my care,) I used general depletion extensively, that is, by repeated purging with neutral salts. Dr. Barton hints that a saturated tincture, combined with white vitriol

might be advantageously administered in cases of gleet. Surely however, this practice does not promise any great advantage. The common means of managing those obstinate discharges, seem much more likely to be efficacious—and should they not prove so, there is little reasonable expectation of doing good by the plant in question.

Dr. Barton's suggestion that this plant is entitled to the attention of physicians in the treatment of nephritis, is not, perhaps, entitled to much weight. This suggestion was principally grounded on the supposed efficacy of *Geranium Robertianum* (Herb Robert) in that complaint.\* Even admitting that this plant has performed all the effects attributed to it, it does not follow that the species under consideration would prove similarly beneficial; for the *Geranium Robertianum*, besides being an astringent, is obviously endued with other virtues,—it is powerfully diuretic.

It is said that *Geranium maculatum* has been collected in Kentucky, where it is called Crow-foot, for *Tormentil* (*Tormentilla erecta*) and vended in the shops of druggists there, for that article; whether fraudulently or from ignorance I know not, but most probably the latter, since the geranium bears no kind of resemblance

\* In North Wales this plant has acquired celebrity, as a remedy for nephritic complaints. A handful of the dried leaves is recommended to be infused as tea, and a tea-cup full taken occasionally.

Mr. Watt. Wm. Withering, Esq.

to the tormentil. The fact I here mention must rest on the authority whence I derived it.\*

In apthous affections of the mouth, a decoction of the root of Crane's-bill, is a very useful and not unpleasant remedy. For this purpose I can confidently recommend it from my own experience, and the corresponding testimony of my friend Dr. Eberle, lately of Lancaster. He has informed me that in many cases he has used it with decided good effect. "I have frequently used a strong decoction of the root of the *Geranium mac.* in cynanche tonsilaris, and sometimes with evident advantage. As a gargle, in uclers of the tongue and fauces, I have found it highly useful.—In a chronic and very obstinate case of apthaous ulceration of the mouth, after various articles had been used, by other physicians and myself, unsuccessfully, the patient was relieved by the use of gargles made of the root of this plant."† The plant may be exhibited in tincture, decoction, infusion, in substance (powdered) and in extract. The dose is from two to four drachms of the tincture; from fifteen to twenty-five, or even thirty five, grains of the powder; from twelve to fifteen grains of the extract: and when given in decoction, about one ounce, or an ounce and a half, may be boiled with half a pint of water. Of this decoction, one or two table spoonfuls may be given at a time. Of the infusion, a proportionate quantity.

\* Barton's Collections.

† Mem. by John Eberle, M. D.



TABLE XIII.

Fig. 1. Represents the lower portion of the plant.

2. The upper portion, cut asunder at the asterick ; a similar part belonged in the specimen figured, to each of the cut stems.
3. The calix, stamens, and pistil, as they appear when the petals have fallen.
4. A petal separated.
5. The germ, pistil, and stamens, as they appear in the full blown flower.
6. The column of capsules and persistent style. When the fruit is mature, each capsule spontaneously separates from the others, and by the elasticity of the columnar supporting part, scatters the seeds.







Fig. 1



Fig. 2

ANTHEMIS COTULA

WILL. C. DROUOT

L. & CO. PARIS

## ANTHEMIS COTULA.

### WILD CHAMOMILE. MAY-WEED.

Stinking Chamomile. May-flower. (In England) Mathen. Dog's Fennel.

### ANTHEMIS COTULA.

*Germ.* Die stinkende Kamille, die Stinkkamille, Hundskamille, Hundsbloom, Hundsdill, Krötendill, Kuhdill, Hundsrömei, Streichblume, Heilige Dille, Gänsekopf.

*Dutch.* Stinkende Kamille ; Paddebloem.

*Dan.* Koedild, Hundekameelblomst, Hundeur, Gaasedild, Baldersbræ, Bakerblom.

*Norw.* Siurguld, Gaaseguld, Gaasedill.

*Swed.* Surkullor ; Hundkamiller.

*W. Manx.* Surtuppor.

*Upland.* Surkullor.

*Dalen.* Hviteteja.

*Skåne.* Ballensbro.

*Engl.* The Stinking Camomile, or May-weed ; the Dog's Fennel.

*Welsh.* Llygad yr ych.

*Fren.* La Camomile puante ;

*vulg.* la maroutte ; oil de vache.

*Ital.* Camomilla fetida, cotula fetida.

*Span.* Manzanilla fetida, cotula fetida.

*Port.* Macella fetida, cotula bastarda.

*Russ.* Solotucha (trava).

*Pol.* Psi rumien; Rumieniec smierdzacy.

*Bohm.* Psy rmen.

*Hung.* Eb kapor; Büdöske ar.

*Lettonia.* Sunnisch, Sirgu kummelis (i. e. horse-chamomile.)

*Eston.* Kannapersed; Kanna perse hein.

Hat einen starken, unangenehmen Geruch, sonst aber viel Aehnlichkeit mit der Ackerkamille. Sie ist officinell. — Die Kröten lieben sie, wie andere stinkende Gewächse, ungemein, daher sie auch Krötendill genannt wird. Den Bienen hingegen ist ihr Geruch unerträglich. Man soll auch die Flöhe damit vertreiben können. (Polyglot. Lex.)

*ANTHEMIS cotula*, L. Sp. Plant. 1261. Amæn. Acad. 4. p. 522. Mat. Med. 530. Huds. 373. With. 738. ed. 5th. vol. 3. p. 910. Hull. 188. Relh. 323. Sibth. 259. Abbot. 186. Curt. Lond. Fasc. 5. t. 61. Raii Syn. 185. Bauh. Hist. v. 3. 120-36. Robson, 186. Fl. Dan. 1179. Eng. Bot. 1772. Lob. Abs. 447. 1, and *ic.* 1. 773. 2. Germ. ed. 757. 1. Park. 87. 9. H. ox. vi. 12. 8. Fuchs. 583. I. B. iii. a. 121. 1. Gars. 216. St. Hilaire. Germ. Plant. vol. 1. part 2. p. 409. Brunf. Herb. v. 1. 255. Germ. em. 757. Pet. H. Brit. t. 19. f. 11. Smith. Fl. Brit. vol. 2. p. 906. Gron. Virg. 127. Shæpf. Mat. Med. Am. p. 125. Willd. Sp. Pl. Tom. III. pars iii. p. 2181. Fl. Suec. 703; 767. Mat. Med. 190. Dalib. Paris. 263. Pall. it. 1. p. 46. Pollich. pal. n. 817. Blackw. t. 67. Hoffm. Germ. 303. Roth. Germ. I. 368. II. 354. Roy. Lugdb. 172. Hall. Helv. n. 104. Bauh. Pin. 135. Houttuyn. Lin. Pfl. Syst. 9. p. 509. Pers. Syn. Pl. pars. 2. p. 466. Suter. Fl. Helv. vol. 2. p. 195. Lam. ill. gen. t. 683. f. 3. Ait. Hort. Kew. ed. 2d. vol. 5. p. 107. Scopoli. Fl. Carn. n. 1092. Dod. Pempt. 258. Bege. Fl. Bost. p. 202. Pursh. Fl. Am. Sep. vol. 2. p. 562. sub nomine *Anthemis arvensis*. Bart. Prod. Fl. Ph. p. 83. Purton's British Plants, vol. 2. p. 397. Smith. Compend. Fl. Brit. p. 126. Curt. Fl. Lon.

#### ANTHEMIS.

Gen. Plant. 1312.

*Recept.* Paleaceum. *Pappus* submarginatus. *Cal.* Hemisphæricus, squamis subæqualibus. Flosc. radii plures quam 5, oblongi. (Sm. Fl. Brit.)

*Recept.* Paleaceum: paleis planis, apice acuminatis, rigidis. *Pappus* nullus s. margo membranaceus. Flores radii plures quam 5. *Cal.* hemisphæricus, subæqualis. (Pursh. Fl. Am. Sep.)



*Recept.* Paleaceum. *Pappus* nullus. *Cal.* hemisphæricus. (Willd. Sp. Pl.)

Nat. Syst. Jussieu *Corymbiferae*. Classis X. Ordo. III.

ANTHEMIS, L. \* Chamæmelum, T. \* Bupthalmum, T. \* Cotula, T. \* Camomille. Flores radiati, ligulis lanceolatis numerosis. Calix imbricatus subæqualis hemisphæricus. Folia sæpe multifida; flores sæpe in ramulis terminales; ligulæ albæ aut luteæ, raro nullæ. A Matricaria discrepat receptaculo paleaceo. Calix A. Arabicæ quasi bracteis obovallatus. Juss. Gen. Pl. p. 185.

Nat. Ord. Linnæi. *Compositæ radiatæ*. Adanson, *Compositæ*.

Classis, *Syngenesia*. Ord. *Polygamia Superflua*, Lin. Syst.

The general characters of Anthemis are, that it has a *calix* common, hemispherical, consisting of numerous linear subequal scales; *corolla* compound, radiate; florets in the disk hermaphrodite and tubular, those in the radius female, and more than five; the former are funnel-shaped, five toothed, erect, the latter ligulate, lanceolate, and sometimes three-toothed. In the hermaphrodite florets the *filaments* are five, capillary, very short, supporting cylindrical tubular *antheræ*. *Germen* oblong, *style* filiform, *stigmata* two, reflex; *seeds* solitary, receptacle chaffy, convex.

Ency.

ANTHEMIS Cotula, receptaculo conico, paleis setaceis, seminibus muticis, foliis bipinnatifidis glabriusculis. Smith. Fl. Brit.

ANTHEMIS Cotula, receptaculis conicis, paleis setaceis, seminibus nudis, foliis bipinnatis foliolis subulatis tripartitis. Willd. Sp. Pl.

ANTHEMIS Cotula, receptacle conical, its scales bristle-shaped; seeds naked; leaves doubly pinnatifid, somewhat smooth. Sm.

#### SYNONYMA.

CHAMÆMELUM fœtidum. Raii. Syst.

C. fœtidum, sive Cotula fœtida. Bauh. Pin.

C. foliis glabris, &c. Hall.

Cotula fœtida. Brumf. Herb.

Cotula alba. Dod. Pempt.

Anthemis Noveboracensis. Cælln. Amœn. Acad.

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Pharm. Cotula fœtida Herba, Flores.



Qual. Fœtida, amara. *Inusitata, eximia.*

Vis: Anodyna, pellens, repellens.

Usus: Hysteria! Epilepsia, Hydrops, Scrophula, Asthma. Infus. Rheumatismus, contusiones.  
Shæpf. Mat. Med.

#### DESCRIPTIO UBERIOR.

Planta annua. Radix tortuosa. Caulis ramosissimus, erectus, foliosus, multiflorus, glaber.. Folia bipinnatifida, plana, incisa, læte viridia, vix pilosa. Calix pilosus, minus scariosus. Discus aureus, convexus. Flosculi radii albi, tridentati, patentes, noctu deflexi. Semina obovata, sulcata, omnino mutica, interdum tuberculato-scabra. Receptaculum cylindraceo-conicum; paleæ omnino setaceæ, flosculis breviores; florens Julio et Augusto. Sm. Fl. Brit.  
Herba, et præcipue flores, ingrati odoris. Variat flore pleno. Dill.

THE generic name *Anthemis*, is supposed to be derived from *ἄνθεω*, *floreo*, having an abundance of flowers. It designates a family of plants of the Chamomile kind, all the species of which are strikingly alike in habit. The species now under consideration is a common weed found every where in the neighbourhood of habitations, and rather repulsive from its peculiar and disagreeable smell.

The whole plant is slightly covered with adpressed woolly hairs or down, perceptible to the naked eye, but very conspicuous under a lens. The root is annual, simple, or sometimes contorted, fibrous. Stalk from one to two feet high, irregularly angular, finely furrowed, or sometimes only striated, erect, and very

much branched down to the bottom. The leaves are alternate, sessile, flat, doubly pinnated; the mid-rib keeled underneath. Flower-stalks upright, finely grooved, naked, thickening towards the top. Calix common to all the florets, hemispherical, imbricated, hairy, scarious, or rough; the scales narrow, slightly margined, of a pale green colour. Flowers pure white, with the centre bright yellow. In favourable situations they are of the size represented in the plate, but not uncommonly somewhat smaller; yet I have occasionally seen them, in unmolested places, something larger. The disk is of a bright golden-yellow colour, consisting of numerous, tubular, hermaphrodite, five-toothed florets.

The ray florets are female, lanceolate, inclining to ovate, two-ribbed, one, two, or three toothed (more or less deeply) at the apex. They are reflexed from sunset till morning, but spreading horizontally during the day. They are pure white, slightly tinged with greenish-yellow at the base. The tubular part of the floret, as well as the germen, is garnished with transparent glands, visible without a glass, but more conspicuously apparent and beautiful under one. Stigma bifid, with the segments reflexed. Receptacle conical, or nearly cylindrical, surmounted by rigid, bristle-shaped paleæ or chaff. Seeds, obovate, bluntly four-cornered, sulcated, sometimes roughly tuberculated, and of a brownish colour. Found growing every where in wastes, near to habitations, among rubbish, and on dirty way sides, all along calcareous turnpike roads, where it

seems to delight, shooting up among the stones. It grows plentifully in the streets, along the gutters, and on the vacant lots of the suburbs of Philadelphia and Baltimore ; and every where through the streets of Germantown, Frankfort, Lancaster, and York, and I presume in other similar places in the United States. It ranges extensively over our states, and is universally known by the name of wild chamomile. It flowers from midsummer till late in the autumn ; and I have often seen it luxuriantly blooming in November and December, in the navy yard of this city.

This plant is very active, and is said by Curtis\* to blister the skin of reapers and children in England, who gather it. It is there so common in corn-fields, as to diminish the crops occasionally. It is also said to be fond of soil well manured. This circumstance, together with the fact of its vesicating property, which our plant does not, I think, possess ; and also some discrepancies in the habit and structure of the plant, induced me to entertain doubts whether the *Anthemis Cotula* of Europe, and the plant designated by that name in this country, were identical. Not being however so fully satisfied as to make up my mind on the subject, I leave it for the future investigation and scrutiny of botanists to determine. Dillenius describes a double-flowered variety, which Withering, Smith, and others inform us is to be found in different parts of England. I

\* *Flora Londinensis.*

have never seen the American plant even approximating to this duplication of its flowers'. Pursh has most surprisingly mistaken this plant for *Anthemis arvensis*, the figure of which in English botany, he refers to. I cannot conceive how he has fallen into this palpable error; for the *arvensis* is strikingly unlike the *A. Cotula*. "Toads are said to be fond of this plant. It is very ungrateful and displeasing to bees. Goats and sheep are not fond of it. Horses. cows, and swine refuse it."\*

#### MEDICAL PROPERTIES.

The medical virtues of May-weed have long been spoken of, but still have been imperfectly known. Few of our common plants have been more extensively employed in domestic medicine, and by empirics, than this, and yet scarcely is a physician to be met with who speaks decidedly of its virtues. Extensive enquiries have led me to a knowledge of the fact of its common, nay daily use, by the vulgar; and induced me to make some trials of it in cases in which it was reputed useful. It may be first proper to

\* *Lin.* Withering, and Purton.



state the general reputation of this plant, as a medicine in certain diseases, and then mention the result of my own experience with it. Shœpf who speaks particularly of it, describes it as a fetid bitter, being anodyne, and repellant; and says that it is used in hysteria, epilepsy, dropsy, scrofula, and asthma; and also that an infusion is useful in contusions and for rheumatism. Here we evidently see that at the period when Shœpf wrote his work (in 1787) great powers were imputed to the plant, and that it was extensively and variously employed. I have reason, from the observation and enquiries I have made, to believe that this undue reputation is still attached by the vulgar of this country to the plant in question, and that it is, consequently, still much resorted to for medical relief. Decoctions of it are said to be used in cases of hysteric suffocation, and in common cases of what are called hysteric fits, as a bath or fomentation. In the same form it has also been applied to hæmorrhoidal swellings and pains, and to all sorts of contusions. It appears to be more generally employed externally, than by inward administration. Yet both decoctions and infusions are not unfrequently given internally, in fevers and colds. The notion that it can cure scrofula, is not confined to the work of Dr. Shœpf: Curtis quotes Mr. Ray as mentioning "that a decoction of the herb "has by some (in England,) been given internally, with success, in "scrofulous cases."\* It is not, I presume, necessary for me to say, that I give no kind of credit to the reputed powers of this plant

\* *Flora Londinensis.*

in curing scrofula ; and the accounts above mentioned, are given with no other view than to communicate all I have been able to learn relative to it.

William Withering, Esq. editor of the 5th edition of his father's work on British plants, says, " the whole plant yields a strong aromatic odour."\* This seems remarkable, because the British plant is represented as being extremely fetid. That of the United States differs some little, though perhaps not specifically, from the foreign vegetable, and is certainly not fetid, though possessed of a peculiar, and, to most people, a disagreeable odour. The smell has nothing aromatic in it. I have heard that the flowers (in which the aroma resides, if there be any in the plant) have been collected, dried, and mixed with the common chamomile of the shops, for sale.

From the experience I have had with this plant, I am induced to believe, that it can be made useful as a bitter only ; and it is indeed a strong and active bitter. Like some other articles of this class, as the common chamomile, a strong decoction, given in the dose of a tea-cup full, will produce copious vomiting and sweating. This circumstance induced me to use it as an assistant operative drink, after the administration of an emetic. And in this way I have found it extremely beneficial, uniformly encouraging

\* Vol. 3. p. 910.

and promoting the action of an emetic; and obviously in a more powerful manner than warm water operates.

Its popular use, and reputed efficacy in rheumatism, undoubtedly is owing to its sudorific effects, which are very considerable. A weak infusion taken to a moderate extent, nauseates the stomach, and produces a determination to the skin.

TABLE XIV.

Fig. 1. The upper portion of the *Anthemis Cotula*.

2 and 3. Parts of a floret of the ray.

4. A floret of the disk.

5. The bifid stigma.







Fig. 1

From the original in the Herbarium of the University of Cambridge

Painted by J. E. Smith

GAULTHERIA PROCUMBENS.

(Lingonberry)

## GAULTHERIA PROCUMBENS.

### MOUNTAIN-TEA. TEA-BERRY.

Trailing Gaultheria. Partridge-berry. Winter-green. Tea-berries. Berried-tea. Grouse-berry. Deer-berries. Ground-holly. Ground-ivy. Spice-berry.

*Germ.* Niederliegende Gaultheria.

*Swedish.* Thebuske.

*Eng.* The trailing Gaultheria.

*Canada.* (By the Indians) Pollom.

Eine kleine Staude, mit rothen Beeren; In Canada trinket man die Blätter wie Thee, daher der Schwedische Name Thebuske. Kalm hat sie Gaultheria genannt, nach einem Französischen Arzt in Canada, namens Gualthier, oder Gaulthier, dessen Kenntnisse in der Botanick errühmt.

(Polyglot. Lex.)

GAULTHERIA procumbens. Kalm. Amœn. Acad. 3. p. 14. Duham. Arb. 1. p. 286. t. 113. Mill. Dict. Willd. Arb. 125. Tournef. inst. 608. Cold. Noveb. 98. Houttuyn Lin. Pfl. Syst. 3. p. 573. Lin. Sp. Pl. 565. Shæpf. Mat. Med. p. 67. Willd. Sp. Pl. Tom. II. pars I. p. 616. Bot. Repos. Pursh. Fl. Am. Sep. vol. 1. p. 283. Muhl. Cat. p. 44. Bart. Prod. Fl. Ph. p. 49. Big. Florula Bost. p. 101. Mich. Fl. Boreali-Am. vol. 1. p. 249. Pers. Syn. Pl. vol. 1. p. 482. Lin. Gen. 220. Schreb. 295. Ait. Hort. Kew. 2d. ed. vol. 3. p. 56. Mart. Mill. Dict. v. 2. Lamark. Illust. t. 367. Gart. t. 63. And. Repos. t. 116.

## GAULTHERIA. (Kalm.)

Gen. Plant. ed. Schreb. n. 749.

*Cal.* exterior 2-phyllus; interior 5-fidus. *Cor.* ovata. *Nectarium* mucronibus 10. *Caps.* 5-locularis, vestita calyce interiore baccata. (Willd. Sp. Pl.)

*Cal.* 5-fidus, basi bibracteatus. *Cor.* ovata. *Caps.* 5-locularis, vestita calyce baccato.

(Pursh. Fl. Am. Sep.)

Nat. Syst. Juss. *Ericæ.* Classis X. Ordo. III.

GAULTHERIA, Kalm. L. \* *Vitis idea*, T. \* Calix campanulatus 5-fidus, extus 2-squamosus. Corolla ovata, limbo sub-5-fido revoluta. Stamina 10, imæ corollæ inserta, filamentis hirsutis, antheris apice 2-cornibus; squamulæ 10, filamentis interjectæ minimæ, germen cingentes. Capsula 5-locularis 5-valvis, tecta calice baccato, suprâ pervio. *Suffrutex humillimus; folia alterna aut fasciculata; flores axillares subsolitarii.*

Juss. Gen. Plant. p. 161.

Nat. Ord. Lin. *Bicornes.*Classis, *Decandria.* Ord. *Monogynia*, Lin. Syst.

Gen. Ch. *Cal.* Perianth inferior, permanent, of one leaf, five-cleft, bell-shaped; its segments half-ovate. *Cor.* of one petal, ovate, slightly five-cleft; limb small, revolute. Nectary of ten awl-shaped, erect, very short bodies, surrounding the germen between the stamens. *Stam.* Filaments ten, awl-shaped, incurved, shorter than the corolla, inserted into the receptacle; anthers with two cloven horns. *Pist.* Germen superior, roundish, depressed; style cylindrical, the length of the corolla; stigma obtuse. *Peric.* Capsule roundish, obtusely pentagonal, depressed, of five cells and five valves, opening at the top in five places, clothed all round with the perianth, become a roundish, coloured berry, open at the summit. *Seeds* numerous, nearly ovate, angular, bony.

Ess. Ch. Calyx inferior, five-cleft, permanent. Corolla ovate. Nectary of ten awl-shaped points. Capsule of five cells, clothed with the pulpy calyx. Eney.

GAULTHERIA *procumbens*, foliis oblongo-obovatis mucronatis dentatis confertis, caule procumbente.

Willd. Sp. Pl.

GAULTHERIA *procumbens*, caule procumbente, ramis erectis, inferne nudis, superne confertim foliosis, obovatis basi acutis tenuissime ciliato-dentatis, floribus paucis terminalibus nutantibus.

Willd. in Pursh. Fl. Sep. Am.

SYNONYMA.

*Vitis Idæa Canadensis*, *pyrolæ folio*. Tournef.

*Anonyma pedunculis arcuatis*. Cold. Noveb.

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Pharm. *Gaultheriæ folia*.

Qual. Fol. amaro-aromatica; Fr. sapore et odore dulci, grato.

Usus. Foliorum infusum theiforme. Shæpf. Mat. Med.

DESCRIPTIO UBERIOR.

Fruticulus spithamæus, sempervirens. Radix repens. Folia ovalia, vel obovata, glabra, coriacea caulem terminantia; serraturis aristatis. Flores plerumque solitarii, axillares, pedunculis arcuatis nutantibus. Calix basi bi-bracteatus. Corolla alba. Fructus ex calice facta; baccæformis sub-rotunda, coccinea, esculenta. Planta in montibus et montosis gaudens. Habitat à Canada ad Floridam usque, solo arido, sterili, arenoso. Floret Junio. Bart. Fl. Ph. MS.

THIS pretty little evergreen shrubby plant, is very generally known by the country people, among whom it is much esteemed for its agreeable aromatic flavour, and extensively used, in the way I shall presently mention.

It belongs to a small genus dedicated by Kalm to D. D. Gautier, a physician formerly of Canada, and an excellent botanist. How the letters *l* and *h* have crept into the word, it is not easy to learn,



since the real name of the physician whom it was designed to honour, was Gautier, unless by latinizing the French *Gauvier*, which is *Gualtherius*. In the Am. Acad. there is a paper by L. J. Chenon, entitled *Nova Plantarum Genera*, in which the plant now under consideration is described, and it is there said that it is called after Dr. Gaulthier. As the genus is now universally spelled *Gaultheria*, it is not expedient to alter its orthography: but as in Pursh's plate of *Gaultheria Shallon*, in Shoepf's *Materia Medica*, and in some other botanical works, the different orthography *Gualtheria* has been used, it is proper to notice it in this place. The specific appellation is not very appropriate; for though the stems frequently are bent in the manner of one or two represented in the plate, thereby having the appearance, among dead leaves and loom, of being procumbent, yet the upright position of the stem, as shewn in the other examples of the figure, is equally common.

The root is creeping, horizontal, and very long, sending up at short distances, one, and sometimes two, stems. The stem seldom exceeds a span in height; is round, of a reddish colour, and terminated by a few evergreen oval, smooth, shining, coriaceous leaves, paler underneath, and somewhat spreading. They have a few acuminate or aristate serratures, and short red petioles. They vary in size, as represented in the drawing. The flowers are generally solitary, seldom exceeding 3 or 5 on a stem, and supported by curved drooping peduncles, of a yellowish-green hue. Calix five-toothed, furnished with two bracts at the base, which have by

some been considered as an exterior calix. The corolla is ovate, monopetalous and terminated at its apex by five, toothed indentures, which are seldom open or spreading in shady woods, though this sometimes happens in sunny and exposed situations. The pistil is short, simple above ; dilated into a flat button at bottom ; and surrounded by ten ciliated or plumous stamens. Both filaments and anthers are of a delicate rose colour. The flowers are succeeded by small capsules contained in a roundish, berry-form, fleshy substance, of a carmine colour, produced by an enlargement of the calix. It possesses an aromatic peculiar flavour, and is extremely grateful to the taste.

This plant is found throughout the United States in shady, hilly woods, delighting in a sandy or loose soil. It is particularly abundant in the pine barrens of New Jersey, and frequent on the hilly woods bordering the Wissahickon creek, near this city. The time of flowering is in June and July. It is brought to the Jersey market of this city in the months of November and December, tied up in little bunches, which are sold for a cent each ; and from the avidity with which they are bought up I infer that the plant is in general use among the common people, it being such only who buy it.

*Gaultheria procumbens* is a hardy plant, and is said to be easily cultivated in England,\* by placing it in a light sandy loam, with a mix-

\* It was cultivated in that country as early as 1762, by Ph. Miller.

ture of peat earth ; and that it flowers and bears fruit in that country most part of the year.

An interesting fact has been mentioned to me by Joseph Ball, Esq. of this city, which merits further enquiry. It is, that the deer are extremely fond of the berries of this plant, and that they eagerly devour them wherever they are found. He further informs me, that it is a common opinion among the country people, to whom this fact is well known, that the peculiar and delicate flavour of venison is owing to this favourite food of the animal. Upon adverting to the geographical range of the *Gaultheria*, I find that it is one of the commonest plants in those sections of our country where the deer are found ; and one of the common names of the plant throughout the United States, Deer-berry, is sufficient evidence of the fact, that it is a favourite article of food for that animal. It might not be uninteresting to try the effect of these berries, as food, upon sheep, or other animals prepared in their young state for our tables. It is now, I believe, not doubted, that the peculiar delicacy of the flesh of the *Anas vallisneria* (of Wilson), or the common canvass-back duck, is owing to its feeding upon the *Vallisneria Americana* (or channel-weed) ; for when so situated as to be deprived of the opportunity of feeding on this article, the flesh loses that delicious flavour for which it is otherwise so remarkable.



## MEDICAL PROPERTIES.

Mountain-tea is one of the most favourite indigenous medicinal articles among the peasantry of those parts of our country where it is abundant. In common with many popular remedies, its virtues are frequently overrated, and its use injudiciously resorted to. This circumstance in other vegetables as well as in this, arises from an ignorance of the real powers or effects of the plant, which is supposed by vague rumours to be endued with virtues to which it has no claim. Hence appears the usefulness of an exact appreciation of the qualities of reputed medicinal plants. The name, mountain-tea implies, that the plant under notice is used in infusion like common tea ; and actual inquiries through various sections of our country have convinced me, that it is extensively employed as a medicinal tea, and with decided good effect. The whole plant is endued with an aromatic flavour, combined with some astringency. It is a stimulant and anodyne. Shoepf says that the leaves have an aromatic bitterness ; but this bitterness, if any, is very inconsiderable. The astringency of the hot infusion is certainly not greater than that of strong green tea. I have heard many vague accounts of the efficacy of the infusion as a palliative in asthma ; but though they con-



vinced me that it was frequently employed in this complaint, they never appeared sufficiently well founded to warrant much attention. Dr. Barton seemed to think that this plant was one of the principal articles in the materia medica of some of our Indian tribes. But it is not known for what purpose they use it, nor what virtues they attribute to it. The professor speaks of having used a strong infusion of the plant, but does not say particularly what was his success with it. The country people are in the constant habit of taking strong infusions of this tea, after great fatigue and undue exposure to heat or cold ; and the relief they find from it under these circumstances, arises doubtless from its stimulating and anodyne property. As it is a very grateful beverage, though not very active in its effects on the system, it will no doubt always prove a useful medicinal tea, when its use is limited to those cases of depression of the system, from the fatigue of long journies, labour, or any other cause, in which stimulating and refreshing beverages may be advantageously employed. But as I have known it to be given in the commencement of violent inflammatory fevers, where the increased action of the system rendered it improper and even hurtful, it may be prudent to caution those who are partial to the use of the plant, against a practice capable of so much injury.

## ECONOMICAL USE.

The berries of this plant are, as has been already mentioned, exceedingly aromatic and grateful to the taste. Joseph Ball, Esq. has informed me that it is a common practice in Jersey to infuse them in brandy or spirit, for the purpose of making a beverage which is taken in small quantities in the same way as common bitters. The same gentleman has also informed me, that during the American revolution, when China tea was scarce, or not procurable, it was a common practice to make a tea of the recent or dried leaves of the Gaultheria, and after being sweetened with sugar and softened with milk or cream, it was drank by many families at breakfast and supper, in lieu of common tea or coffee. He says also that it is at this time frequently used by the country people in Jersey, in the manner just mentioned.

## TABLE XV.

Fig. 1. Represents the *Gaultheria procumbens* of its natural size, and in the common manner of its growth from a long creeping root.

2. The germ, pistil, and stamens aggregated in their common form.

3. A stamen.

4. The pistil.

5. The fleshy, berry-like fruit.







LOBELIA INFLATA.

[Wild colapoco.]

## LOBELIA INFLATA.

WILD TOBACCO. INDIAN TOBACCO.

Emetic weed. Bladder-podded Lobelia. Eye-bright.

Aufgeblasene Lobelie. Germ. (Willd.)

**LOBELIA** inflata, L. Hort. Ups. 276. Act. Ups. 1741. p. 23. t. 1. Gron. Virg. 134. Mill. Dict. n. 5. Hort. Cliff. 500. Roy. Lugdb. 528. Houttuyn Lin. Pfl. Syst. 10 p. 69. Willd. Sp. Pl. 1. p. 946. Michx. Fl. Boreali-Am. vol. 2. p. 152. Muhl. Cat. p. 23. Big. Florul. Bost. p. 55. Thatch. Disp. 2d ed. p. 258. Bart. Prodr. Fl. Ph. p. 30. Shæpf. Mat. Med. 128. Barton's Collections, part 1. p. 37, 58. Pers. Syn. Pl. vol. 2. 213. Elliot. Sketch. Georg. &c. p. 266. Ait. Hort. Kew. ed. 2. vol. 1. p. 359. Coxe. Disp. ed. 3d. p. 401.

### LOBELIA.

Gen. Plant. 1363.

*Cal.* 5-fidus. *Cor.* 1-petafa, irregularis, sæpiùs fissa. *Caps.* infera, 2-3-locularis.

Nat. Fam. Juss. *Lobeliaceæ*. (Ann. du Mus.)

Gen. Ch. *Cal.* Perianth of one leaf, surrounding the germen, in five deep, nearly equal, withering segments; the two superior ones most directed upwards. *Cor.* of one petal, irregular, slightly ringent; tube cylindrical, longer than the calix, divided lengthwise at the upper side; limb in five deep lanceolate segments, of which the two uppermost are smallest, most reflexed, and most deeply separated, constituting the upper lip; the three lowermost more spreading, and generally

largest. *Stam.* Filaments five, awl-shaped, the length of the tube of the corolla, united upwards; anthers united into an oblong, somewhat oblique and curved, cylinder, separating into five parts at the base. *Pist.* Germen more than half inferior, pointed; style cylindrical, the length of the stamens; stigma obtuse, hispid. *Peric.* Capsule ovate, or roundish, of two or three cells, and two or three valves, bursting at the top, encompassed by the calix; the partitions contrary to the valves. *Seeds* numerous, minute, smooth. *Receptacle* conical.

Ess. Ch. Calix in five segments, crowning the germen. Corolla of one petal, irregular. Anthers cohering, incurved. Capsule half inferior, of two or three cells. Ency.

LOBELIA inflata caule erecto, foliis ovatis subserratis pedunclo longioribus capsulis inflatis.

Willd. Sp. Pl.

LOBELIA inflata, erecta, ramosa, hirsutissima; foliis ovatis serratis, racemis foliosis, capsulis inflatis.

Pursh. Fl. Am.

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Pharm. *Lobelia inflata* Herba, folia, capsula, Semina.

Qual: Lactescens, acris, nauseosa.

Vis: Emetica drastica.

#### DESCRIPTIO UBERIOR.

Planta biennis, pedalis et ultra. Radix quasi fibrosa; albida, acris et gustu nauseosa. Herba lactescens, acris. Caulis semper solitarius, erectus ramosus, foliosus, obsoletè angulatus, pubescens et interdum hirsutus. Pubescentia versus apicem ramorum, sub-nulla. Folia sparsa, seu alterna, ovalia, sessilia, subamplexicaulia, denticulato-serrata. Racemi terminales multiflori. Flores brevius pedicellati. Corolla cœrulea, internè sub-violacea. Calicis foliola subulata, longitudine corollæ. Semina numerosissima minuta, in capsulis vesiculato-inflatis contenta. Habitat in arvis presertim requietis; et ad vias, solo lutoso; florens Augusto et ad finem Octobris.

Bart. Fl. Ph. MS.

FATHER PLUMIER dedicated a genus of plants to Mathias de Lobel, or de L'Obel, author of a history of plants in 1576. The plant to which he originally applied the name of Lobelia, is now the



Scævola of Linnæus. When this botanist was convinced by Jacquin, that under the name of Lobelia, a vast number of plants generically distinct from the original plant, were confounded with it, and that these plants were better known than the true Lobelia, by that name; he judged it proper to correct the error by retaining this name for them, and giving a new one to the genus of Plumier. This is the origin of the term Lobelia for the genus as it now stands.

The Lobelia inflata is a biennial inelegant plant, about one foot, and from that to two feet high. The root is fibrous, yellowish-white, of an acrid taste, resembling that of tobacco. Stem upright, always solitary, angular, leafy, very pubescent, sometimes hirsute, and very much branched about mid way. Branches axillary, shorter than the stem, which rises for six or ten inches above the top of the highest branches, as represented by fig. 2. The leaves are irregularly scattered and alternate, sometimes crowded, oval, generally sessile, with the margins unequally indented with tooth-like serratures. The flowers are numerous, situated on terminal, leafy racemes, and supported on short axillary peduncles. The corolla is monopetalous and labiate; the lower lip three, and the upper two-toothed, is of a pale blue colour externally, and delicate violet within. The calix leaves are awl-shaped, and the length of the corolla. Seeds numerous, very small, and contained in egg-shaped inflated capsules, which have given rise to the specific appellation of the



plant. It is extremely common throughout the United States, growing on the way sides, in clayey or sterile soils ; in neglected fields ; and not unfrequently in moist grounds, and on the margins of ditches and field-drains. It is found in every road running from the city of Philadelphia to the neighbouring country, and is particularly abundant about Darby, and in the roads running through Belmont woods. It commences flowering in the last days of July, and continues in bloom till the end of October, and even as late as the first week of November. On the eighth day of last November, whilst travelling from Washington to Baltimore, I observed many specimens in full bloom along the road sides, and I subsequently saw a few flowering individuals on the 16th of November, in the roads through Belmont woods.

The *Lobelia inflata* is supposed by some to be an annual ; by others a biennial ; and Mr. Elliot, in his *Southern Flora*, says it is a perennial plant. Linnæus, Willdenow, Pursh, and other foreign botanists, have set it down in their books as an annual. I have always considered it a biennial, and have therefore so called it at the head of this chapter.

This plant has been accused in New England and elsewhere of producing the *slavers* in horses. It seems to be a matter of considerable importance to the farmers, to ascertain the real plant which thus affects their horses, if indeed it be any one particular plant. I

am aware that the same effect on these animals, has been ascribed to the *Euphorbia hypericifolia* (not *E. maculata*, which is a small procumbent or adpressed plant, and does not grow in cultivated grounds)—to the *Hypericum perforatum*, or common St. John's wort, and other plants. The Indian tobacco is more likely, from its sensible properties, to produce the disease mentioned, than either of the other vegetables.

#### MEDICAL PROPERTIES.

*Lobelia inflata* is decidedly one of the most active of our native vegetables. It might perhaps be said with truth, that the United States do not yield a plant of more powerful and unequivocal operation on the human system. And since poisons are generally, under judicious use, good medicines, the Indian tobacco seems to have an undoubted claim to a place in the *Materia Medica*. It is possessed of an emetic, sudorific, and powerful expectorant effect; but is chiefly remarkable for the first of these operations on the system. When given with a view to empty the stomach, it operates vehemently and speedily; producing, however, great relaxation, debility, and perspiration. Like other active emetics, it sometimes

operates on the bowels; but its cathartic effect is seldom observable unconnected with its emetic operation. I have not, in various trials with the plant, found it in any instance to affect the alimentary canal, as a primary seat of its operation; yet it is said by some that large doses operate in this way, without producing emesis. It does not appear to be possessed of any particular diuretic property, as was supposed by the late Professor Barton, would be found to be the case.

The first notice I can find in print, of the medicinal virtues of Indian tobacco, is simply a brief remark by Shoepf, that the "root is astringent, and used in ophthalmia." He seems to have had little knowledge on the subject, and from the manner in which the plant is mentioned by him, it may reasonably be suspected that a vague rumour only of its medical properties had reached him. The next accounts we have of it as a medicine, are by the Rev. D. Cutler, and the late Professor Barton. The latter does not speak from experience, but remarks that it has been found useful in leucorrhœa; and that it will probably be found diuretic. He is altogether silent respecting its emetic power, though he seems to have suspected that this was the species of *Lobelia* called in New-England Emetic-weed. Since the accounts of these gentlemen were published, the *Lobelia* has gained admittance into our dispensatories, and Dr. Thatcher has given a long and satisfactory account of its virtues.

Every portion of this species of *Lobelia* is endued with the same acrid, pungent, and finally, nauseating taste. On chewing the root, the leaves, the stem, or one of the capsules, the first impression on the palate is not very decided: but on continuing the chewing, a sense of heat or biting is perceived in the back part of the tongue, and in the fauces. At this time the taste of the plant is similar to that of tobacco, seneka, or tartar-emetic; but if the mastication be persevered in, slight giddiness and increase of saliva come on; and if the quantity of the article in the mouth be sufficient, and be swallowed, nausea and excessive vomiting supervene, succeeded by great relaxation of the muscles, perspiration, and prostration of strength. One or two capsules, in the recent state, will produce full vomiting in most persons. From this account, which is faithfully given from the relations of those who have taken the *Lobelia* by my directions, as well as in part from my own feelings, it is evident that it is very stimulating to the mouth and first passages. This, together with its subsequent effects when taken extensively, would indicate that it is considerably narcotic. It is manifest also from these effects, that the plant is sufficiently deleterious to create dangerous consequences to the system, if administered without great caution. Not only horses and cattle have been supposed to be killed by eating it, but a remarkable instance of its deleterious effects on the system, is related in the report of a trial for murder of a notorious empiric in Massachusetts, who used this *Lobelia* to a pernicious extent as a nostrum. This daring and ignorant man is said to have “usually prescribed it, and



frequently with impunity, in the dose of a common tea-spoonful of the powdered seeds or leaves, and often repeated.\* If the medicine

\* William Rawle Esq. has put into my hands the report of this trial; and it may not be without a useful tendency to insert it here. In a medical and civil point of view it is equally interesting :

“ COMMONWEALTH *versus* SAMUEL THOMPSON.

“ At the beginning of this term (Nov. 1809), the prisoner Thompson was indicted for the wilful murder of Ezra Lovett, jun. by giving him a poison called Lobelia on the ninth day of January last, of which he died on the next day. On the twentieth of December, at an adjournment of this term, the prisoner was tried for this offence, before the chief justice, and the judges Sewall and Parker.

“ On the trial it appeared in evidence, that the prisoner, some time in the preceding December, came into Beverly, where the deceased then lived ; announced himself as a physician ; and professed an ability to cure all fevers, whether black, grey, green, or yellow : declaring that the country was much imposed upon by physicians, who were all wrong if he was right. He possessed several drugs, which he used as medicines, and to which he gave singular names. One he called *coffee*; another *well-my-gristle*; and a third *ram-cats*. He had several patients in Beverly and in Salem, previous to Monday the second of January, when the deceased, having been for several days confined to his house by a cold, requested that the prisoner might be sent for as a physician.

“ He accordingly came, and ordered a large fire to be kindled to heat the room. He then placed the feet of the deceased, with his shoes off, on a stove of hot coals, and wrapped him in a thick blanket, covering his head. In this situation he gave him a powder in water, which immediately puked him. Three minutes after he repeated the dose, which in about two minutes operated violently. He again repeated the dose, which in a short time operated with more violence. These doses were all given within

does not puke or evacuate powerfully, it frequently destroys the patient, and sometimes in five or six hours.\* The testimony of

the space of half an hour, the patient in the mean time drinking copiously of a warm decoction, called by the prisoner his *coffee*. The deceased, after puking, in which he brought up phlegm, but no food, was ordered to a warm bed, where he lay in a profuse sweat all night. Tuesday morning the deceased left his bed, and appeared to be comfortable, complaining only of debility: and in the afternoon he was visited by the prisoner, who administered two more of his emetic powders in succession, which puked the deceased, who, during the operation, drank of the prisoner's *coffee*, and complained of much distress. On Wednesday morning the prisoner came, and after causing the face and hands of the deceased to be washed with rum, ordered him to walk in the air, which he did for about fifteen minutes. In the afternoon the prisoner gave him two more of his emetic powders, with draughts of his *coffee*. On Thursday the deceased appeared to be comfortable, but complained of great debility. In the afternoon the prisoner caused him to be again sweated, by placing him with another patient, over an iron pan with vinegar heated by hot stones put into the vinegar, covering them at the same time with blankets. On Friday and Saturday the prisoner did not visit the deceased, who appeared to be comfortable, although complaining of increased debility. On Sunday morning, the debility increasing, the prisoner was sent for, and came in the afternoon, when he administered another of his emetic powders with his *coffee*, which puked the deceased, causing him much distress. On Monday he appeared comfortable, but with increasing weakness, until the evening; when the prisoner visited him, and administered another of his emetic powders, and in about twenty minutes repeated the dose. This last dose did not operate. The prisoner then administered pearl-ash mixed with water, and afterwards repeated his emetic potions. The deceased appeared

\* Thatcher's Disp. 3d ed. p. 402.

Dr. Drury of Marblehead, and the Rev. Dr. Cutler, have brought the Indian tobacco into notice, for the cure and relief of asthma.\* In-

to be in great distress, and said he was dying. The prisoner then asked him how far the medicine had got down. The deceased, laying his hand on his breast, answered *here*: on which the prisoner observed that the medicine would soon get down, and unscrew his navel: meaning, as was supposed by the hearers, that it would operate as a cathartic. Between nine and ten o'clock in the evening, the deceased lost his reason, and was seized with convulsion fits; two men being required to hold him in bed. After he was thus seized with convulsions, the prisoner got down his throat one or two doses more of his emetic powders; and remarked to the father of the deceased, that his son had got the *hyps* like the devil, but that his medicines would fetch him down; meaning, as the witness understood, that it would compose him. The next morning the regular physicians of the town were sent for, but the patient was so completely exhausted, that no relief could be given. The convulsions and the loss of reason continued, with some intervals, until Tuesday evening, when the deceased expired.

"From the evidence it appeared that the *coffee* administered was a decoction of marsh-rosemary, mixed with the bark of bayberry bush, which was not supposed to have injured the deceased. But the powder which the prisoner said he chiefly relied upon in his practice, and which was the emetic so often administered by him to the deceased, was the pulverized plant, trivially called Indian tobacco. A Dr. French, of Salisbury, testified that this plant, with this name, was well known in his part of the country, where it was indigenous, for its emetic qualities; and that it was gathered and preserved by some families, to be used as an emetic, for which the roots, as well as the stalks and leaves, were administered; and that four grains of the powder were a powerful puke. But a more minute description of this plant was given by the Rev.

\* For a detailed account of their cases the reader is referred to Thatcher's Dispensatory.



duced by their accounts, and the obvious expectorant effects of the plant, I administered it to a domestic in my family, who was dis-

Dr. Cutler. He testified that it was the *Lobelia inflata* of Linnæus : \* that many years ago, on a botanical ramble, he discovered it growing in a field not far from his house in Hamilton : that, not having Linnæus then in his possession, he supposed it to be a non-descript species of the *Lobelia* : that by chewing a leaf of it, he was puked two or three times : that he afterwards repeated the experiment with the same effect : that he enquired of his neighbour, on whose ground the plant was found, for its trivial name. He did not know of any ; but was apprized of its emetic quality, and informed the doctor that the chewing of one of the capsules operated as an emetic, and that the chewing more would prove cathartic. In a paper soon after communicated by the doctor to the American Academy, he mentioned the plant, with the name of the *lobelia medica*. He did not know of its being applied to any medical use until the last September, when, being severely afflicted with the asthma, Dr. Drury of Marblehead informed him that a tincture of it had been found beneficial in asthmatic complaints. Dr. C. then made for himself a tincture, by filling a common porter bottle with the plant, pouring upon it as much spirit as the bottle would hold, and keeping the bottle in a sand heat for three or four days. Of this tincture he took a table spoonful, which produced no nausea, and had a slight pungent taste. In ten minutes after he repeated the potion, which produced some nausea, and appeared to stimulate the whole internal surface of the stomach. In ten minutes he again repeated the potion, which puked him two or three times, and excited in his extremities a strong sensation like irritation : but he was relieved from a paroxysm of the asthma, which had not since returned. He has since mentioned this tincture to some physicians, and has understood from them, that some patients have been violently puked by a tea-spoonful of it : but whether this difference of effect arose

\* \* *Lobelia*. Class Pentandria. Order Monogynia. Capsule 2 or 3 celled : corol. irregular, cloven : antheræ united : stigma simple. Species. *Inflata* : stem erect ; leaves ovate, slightly serrate, longer than the peduncle : capsules inflated. Turt. Lin. vol. 4. pp. 259. 330."



treassingly affected with spasmodic asthma. She is a female of narrow and depressed thorax ; and for years past has been subject to

from the state of the patients, or from the manner of preparing the tincture, he did not know.

“ The Solicitor General also stated that, before the deceased had applied to the prisoner, the latter had administered the like medicines with those given to the deceased, to several of his patients, who had died under his hands ; and to prove this statement he called several witnesses, of whom but one appeared. He, on the contrary, testified that he had been the prisoner’s patient for an oppression at his stomach—that he took his emetic powders several times in three or four days, and was relieved from his complaint, which had not since returned. And there was no evidence in the cause, that the prisoner, in the course of his very novel practice, had experienced any other fatal accident among his patients.

“ The defence stated by the prisoner’s counsel was, that he had for several years, and in different places, pursued his practice with much success ; and that the death of the deceased was unexpected, and could not be imputed to him as a crime. But as the court were satisfied, that the evidence produced on the part of the commonwealth did not support the indictment, the prisoner was not put on his defence.

“ The Chief Justice charged the jury : and the substance of his direction, and of several observations, which fell from the court during the trial, are for greater convenience here thrown together.

“ As the testimony of the witnesses was not contradicted, nor their credit impeached, that testimony might be considered as containing the necessary facts, on which the issue must be found.

“ That the deceased lost his life by the unskilful treatment of the prisoner, did not seem to admit of any reasonable doubt : but of this point the jury were to judge. Before the Monday evening preceding the death of Lovett, he had by profuse sweats, and by often repeated doses of the emetic powder, been reduced very low. In this state, on that evening, other doses of this Indian tobacco were administered. When

this complaint. During one of the paroxysms I directed her to take a tea-spoonful of the brandy tincture every two hours. After taking

the second potion did not operate, probably because the tone of his stomach was destroyed, the repetition of them, that they might operate as a cathartic, was followed by convulsion fits, loss of reason, and death.

“ But whether this treatment, by which the deceased lost his life, is or is not a felonious homicide, was the great question before the jury.

“ To constitute the crime of murder, with which the prisoner is charged, the killing must have been with malice, either express or implied. There was no evidence to induce a belief that the prisoner, by this treatment, intended to kill or to injure the deceased; and the ground of express malice must fail. It has been said, that implied malice may be inferred from the rash and presumptuous conduct of the prisoner, in administering such violent medicines. Before implied malice can be inferred, the jury must be satisfied that the prisoner, by his treatment of his patient, was wilfully regardless of his social duty, being determined on mischief. But there is no part of the evidence, which proves that the prisoner intended by his practice any harm to the deceased. On the contrary, it appears that his intention was to cure him. The jury would consider whether the charge of murder was, on these principles, satisfactorily supported.

“ But though innocent of the crime of murder, the prisoner may, on this indictment be convicted of manslaughter, if the evidence be sufficient. And the Solicitor General strongly urged, that the prisoner was guilty of manslaughter, because he rashly and presumptuously administered to the deceased a deleterious medicine, which, in his hands, by reason of his gross ignorance, became a deadly poison.

“ The prisoner's ignorance is in this case very apparent. On any other ground consistent with his innocence, it is not easy to conceive, that on the Monday evening before the death, when the second dose of his very powerful emetic had failed to operate, through the extreme weakness of the deceased, he could expect a repetition of these fatal poisons would prove a cathartic, and relieve the patient: or that he could mistake convulsion fits, symptomatic of approaching death, for an hypochondriac affection.

the second spoonful, she was immediately relieved. In a subsequent attack, the experiment was repeated, increasing the dose to a

“ But on considering this point, the court were all of opinion, notwithstanding this ignorance, that if the prisoner acted with an honest intention and expectation of curing the deceased by this treatment, although death, unexpected by him, was the consequence, he was not guilty of manslaughter.

“ To constitute manslaughter, the killing must have been a consequence of some unlawful act. Now there is no law, which prohibits any man from prescribing for a sick person with his consent, if he honestly intends to cure him by his prescription. And it is not felony, if through his ignorance of the quality of the medicine prescribed, or of the nature of the disease, or of both, the patient contrary to his expectation should die. The death of a man, killed by voluntarily following a medical prescription, cannot be adjudged felony in the party prescribing, unless he, however ignorant of medical science in general, had so much knowledge, or probable information of the fatal tendency of the prescription, that it may be reasonably presumed by the jury, to be the effect of obstinate wilful rashness at the least, and not of an honest intention and expectation to cure.

“ In the present case there is no evidence that the prisoner, either from his own experience, or from the information of others, had any knowledge of the fatal effects of the Indian tobacco, when injudiciously administered : but the only testimony produced to this point, proved that the patient found a cure from the medicine.

“ The law thus stated, was conformable, not only to the general principles which governed in charges of felonious homicide, but also to the opinion of the learned and excellent lord chief justice Hale. He expressly states that if a physician, whether licensed or not, gives a person a potion, without any intent of doing him any bodily hurt, but with intent to cure, or prevent a disease, and contrary to the expectation of the physician, it kills him, he is not guilty of murder or manslaughter.

“ If in this case it had appeared in evidence, as was stated by the solicitor general, that the prisoner had previously, by administering this Indian tobacco, experienced



tea-spoonful every hour, and with the same effect ; the patient declaring that she never found such immediate and entire relief from any of the numerous medicines she had previously taken for this complaint. She complained of dizziness, nausea, and some debility, after taking the second spoonful ; and told me she suspected the medicine administered was tobacco. Not having since had any attack of the disease, I have had no opportunity of giving the medicine a further trial with a view to radical relief. I prescribed it also in a case of asthmatic cough at the naval hospital of this place ; and with much relief to the patient. Dr. Samuel Stewart of this city, has prescribed both powdered leaves, and tincture, in a severe case

its injurious effects, in the death or bodily hurt of his patients, and that he afterwards administered it in the same form to the deceased, and he was killed by it, the court would have left it to the serious consideration of the jury, whether they would presume that the prisoner administered it from an honest intention to cure, or from obstinate rashness, and fool-hardy presumption, although he might not have intended any bodily harm to his patient. If the jury should have been of this latter opinion, it would have been reasonable to convict the prisoner of manslaughter at least. For it would not have been lawful for him again to administer a medicine, of which he had such fatal experience.

“ It is to be exceedingly lamented, that people are so easily persuaded to put confidence in these itinerant quacks, and to trust their lives to strangers without knowledge or experience. If this astonishing infatuation should continue, and men are found to yield to the impudent pretensions of ignorant empiricism, there seems to be no adequate remedy by a criminal prosecution, without the interference of the legislature, if the quack, however weak and presumptuous, should prescribe, with honest intentions and expectations of relieving his patients.—*The prisoner was acquitted.*”

Tyng's Reports, vol. 6. p. 134.



of spasmodic asthma; \* and from his own observations, and the testimony of his patient, the doctor is decidedly of opinion that the reputation of Indian tobacco in similar cases, as given by Thatcher and others, is well grounded. Dr. Stewart used the tincture made according to the formula established by the Essex District Medical Society, and administered it in doses similar to those used by Dr. Cutler.

Dr. Thatcher relates a case of hydrophobia effectually cured, in its last stage, by the *Lobelia inflata*. As the doctor gives us this account at second-hand, and not from a medical man; and as the supposed fact is in itself improbable, he will excuse me in venturing to question whether the case alluded to, was really one of hydrophobia. The accounts of hydrophobic cases too frequently originate in the ignorance of the common people of the real disease designated by that name, aided by fears, and exaggerated by iteration. Yet the peculiar effects of Indian tobacco on the mouth, fauces, and throat, and indeed the excessive relaxation of muscular energy which it produces, when extensively used, may, perhaps, afford some relief in this shocking disease, if timely administered.

\* Mr. Potter, bookbinder, Carter's alley; who informed me he had been essentially relieved.

I have given the tincture in doses of twenty drops every hour, to two children (one four and the other three years old) labouring under whooping cough ; and my success in those cases, has encouraged me to resort freely to the use of this medicine, as a pectoral and antispasmodic in this disease. Dr. Thatcher says, “ as a pectoral “ it has been found useful in consumptive coughs depending on mu- “ cus accumulated in the bronchial vessels, by exciting nausea and “ expectoration.” Of its use in such cases I know nothing from experience. He continues, “ from its very speedy operation as an “ emetic, and its stimulating effects on the mouth and fauces, beneficial results might be expected from its use in croup and whooping cough ; and on some trials our expectations have been realized in this respect.” Of its efficacy in croup I cannot speak from experience, but the following case related to me by Dr. Eberle, whom I have already mentioned, sufficiently justifies the belief, that in this alarming complaint it may be resorted to with probable success, if not with confidence. All who have had occasion to use the common antimonial and other emetics in croup, have seen cause to lament their occasional want of activity ; and the plant in question really seems well entitled to the notice of physicians, as an emetic, antispasmodic and expectorant, in that complaint.

“ Feb. 16, 1818.—About two months ago I was called to see a child aged eight years, of the Rev. Mr. Endress in Lancaster, affected in a most violent degree with croup. I immediately bled the patient

largely, without however affording much relief. The child was nearly strangulated when I saw it first ; the bleeding relieved it somewhat, but it still laboured excessively in breathing. From the suddenness of the attack of the disease, and its immediate great violence, I looked upon the case as spasmodic croup. Having seen in other cases the great relaxing effects of the *Lobelia inflata*, I determined to give to the child that emetic. I took about half a drachm of the dried plant, and infused it in half a pint of water. The child took one table-spoonful ; in about ten minutes afterwards the dose was repeated. This induced a very great degree of nausea ; a little more of the infusion was given which brought on vomiting. The disease from this moment disappeared ; not the least hoarseness or difficulty of breathing remained. The nausea continued for more than three hours."

Dr. Eberle has also furnished me with an account of its use, by injection, instead of tobacco, in a case of strangulated hernia. The efficacy of the injected decoction in this instance, derives peculiar importance from the speedy relief occasioned by it, and the strong evidence it affords of the value of botanical knowledge to a physician, particularly one practising in the country.

" In September, 1816, I was called to Mr. Bowman, ten miles south of Lancaster, for the purpose of reducing a strangulated scrotal hernia ; after having used a variety of means for the reduction of the



protruded parts unsuccessfully, I resolved on trying the tobacco injection ; on making inquiry, however, I found that there was none in the house. A person was immediately sent to a neighbouring house for the purpose of procuring some. In the mean time, however, I gathered some of the *Lobelia*, and made a strong decoction of it. I injected half a pint of this decoction. In about twenty minutes the patient began to feel very sick, and made some efforts to vomit ; I now endeavoured to reduce the hernia, but did not succeed. As the sickness did not proceed to a very great degree of prostration, I ventured to inject about one gill more. Almost immediately a very profuse perspiration broke out, over all his body ; the sickness became extremely distressing ; and every part of the body seemed in a perfect state of relaxation. The hernia was now readily returned. The sickness continued for nearly one hour after the last injection was given."

The wild tobacco should be plucked up by the roots, in the month of August or September, while in flower at the top of the branches, and full of the inflated capsules below. The whole plant should be then carefully dried for use, pulverised, or made into tincture. I have used both the tincture made from the recent plant, and from the dried leaves and capsules ; and think the former was most active. From five to fifteen, and sometimes twenty grains of the powdered leaves, will produce emesis in an adult ; but as it is a powerful plant, the dose should be small and repeated. The satua-



ted tincture may be given to an adult, to the extent of one, rarely two table spoonfuls every three hours ; it is proper however to commence by a pap or tea-spoonful, and increase the dose. Ten drops of this tincture will be a sufficient dose for a child under twelve months ; and over one, and under three years, from twenty to forty or fifty drops, as the circumstances may require, or the patient may seem to bear. A child of five years will bear eighty or ninety drops, without any distressing effect. If given in cases of croup, it will, perhaps, be necessary to use larger doses than these. I cannot conclude this article, without earnestly calling the attention of the physicians of our country to the plant under consideration. It is common every where in the United States, and easily recognised or identified.

## TABLE XVI.

Fig. 1. Is a representation of the lower portion of *Lobelia inflata*, of the natural size, having about three inches of the stem near the root, cut off.

2. Is the upper portion of the same plant, severed from fig. 1, at the asterisk.

3. A flower.
4. The corolla opened.
5. The vesicular, nerved capsule.
6. The corolla removed, shewing the calix, column of five  
stamens, and pistil.
7. The incipient capsule and pistil.
8. A stamen separated.









Drawn from Nature by WPCB vol. 1

Tanner Vallance Kearny & Co.

*CRABAPPLE*

Winter 1850

## PRINOS VERTICILLATUS.

### WINTER-BERRY.

Black-Alder. Whorled Winter-berry. Virginian Winter-berry.

*Germ.* Die Wortelförmige Winterbeer. Virginische Winterbeere. (Willd.)

*English.* Deciduous Winter-berry, or Service-bush.

*French.* Apalanche (Apalanchine) à feuilles de prunier.

*PRINOS verticillatus*, L. Sp. Pl. vol. 1. p. 471. Munt. Phyt. 213. t. 51. Duham. Arb. 1. p. 62. t. 23. Mill. Dict. n. 1. Du Roi Harbk. 2. p. 157. Wangenh. Amer. 97. Willd. Arb. 236. Willd. Sp. Pl. tom. 2. par. 1. p. 225. Gron. Virg. 39. Houttuyn. Lin. Pfl. Syst. 1. p. 430. Pers. Syn. Pl. vol. 1. p. 387. Mich. Fl. Boreali-Am. vol. 2. p. 236. Coxe. Am. Disp. ed. 3. p. 519. Barton's Collections, part 2. p. 5. Pursh. Fl. Am. Sep. vol. 1. p. 221. Bart. Prodr. Fl. Ph. p. 44. Big. Florula Bost. p. 79. Schoepf. Mat. Med. Am. p. 50. Smith's Insects of Georgia. t. 86. Ait. Hort. Kew. ed. 2. vol. 2. p. 312. Willd. Enum. 394. Muhl. Cat. Fl. Am. Sep. p. 36. St. Hilaire, Germ. des plant. vol. 2. p. 269.

### PRINOS.

Gen. Plant. ed. Schreb. n. 594.

*Cal.* 6-fidus. *Cor.* 1-petala, rotata. *Bacca* 6-sperma. (Willd. Sp. Pl.)

*Cal.* inferus, 6-fidus. *Cor.* 1-petala rotata, 3-7-fida. *Bac.* 6-sperma. *Dioicus*. (Pursh. fl. Am. Sep.)

Nat. Syst. Juss. *Rhamni*. Classis XIV. Ordo XIII.

PRINOS, L. *Apalachine*. Calix minimus 6-fidus. Corolla 6-partita plana. Stamina 6, filamentis subulatis, antheris oblongis. Stylus brevis; stigma 1. Bacca subrotunda, fœta, 6 nucibus 1-spermis. Arbusculæ aut frutices; folia alterna, in quibusdam sempervirentia; pedunculi axillares multiflori; flores parvi, interdum 5-7-8-fidi 5-7-8-andri 5-7-8-spermi. Juss. Gen. Plant. p. 379.

Nat. Syst. St. Hilaire. *Neprunées*.

Nat. Ord. Linnæi, *Dumosæ*.

Classis *Hexandria*. Ordo *Monogynia*. Lin. Syst.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, six-cleft half way down, flat, very small, permanent. *Cor.* of one petal, wheel-shaped; tube none; limb flat; deeply cloven into six ovate segments. *Stam.* Filaments six, awl-shaped, erect, shorter than the corolla; anthers oblong, obtuse. *Pist.* Germen superior, ovate, terminating in a style shorter than the stamens; stigma obtuse. *Peric.* a roundish berry, six-celled, much larger than the calix. *Seeds* solitary, bony, obtuse, convex on one side, angular on the other.

Obs. The chief difference between this and *Nex* consists in its being hexandrous; but the parts of fructification, according to Jussieu, agree occasionally with that genus in number. *Prinos* is sometimes dioicous.

Ess. Ch. Calix inferior, six cleft. Corolla of one petal, wheel-shaped, from three to seven cleft. Berry of six seeds. Ency.

PRINOS Gronovii; foliis ovalibus, serrulatis, acuminatis: fasciculis florum masc. axillaribus, umbellati-formibus; floribus fœmineis aggregatis; utrisque 6-partitis. Mich. Fl. Boreali-Am.

(in Dioecia-Hexandria.)

PRINOS verticillatus, foliis deciduis ovalibus serratis acuminatis subtus pubescentibus, fasciculis florum masc. axillaribus umbelluliformibus; fœmineis aggregatis utrinque 6-partitis.

Willd. Sp. Pl. et Pursh Fl. Am. Sep.

#### SYNONYMA.

ALCANNA major latifolia dentata. Munt. Phyt.

AQUIFOLIUM foliis deciduis. Duham. Arb.

PRINOS Gronovii. Mich. Fl. Boreali-Am.

PRINOS padifolius. Willd. Enum.



Pharm. *Prini verticillati* Cortex (et Bacca).

Vis : Antiseptica (et tonica).

Usus : Gangrena, Icterus. Shoepf. Mat. Med.

DESCRIPTIO UBERIOR.

*Frutex* fructu formosus. Rami horizontales, patuli, cinerei. Folia decidua, ovalia, serrata, acuminata, basi attenuata, brevius petiolata nervibus subtus pilosiusculis. Flores minimi, axillares. Corolla alba, monopetala, plerumque 6-partita. Baccae formosae, coccineae, amarae. Habitat in paludibus, et umbrosis humidis; floret Junio et Julio. Bart. Fl. Ph. MS.

ONE of the most beautiful ornaments of the swamps of our country, in the autumn and winter, is the Winter-berry. The elegant colour of the berries, aggregated in numbers of two and three on the small branches of the shrub, together with their multitude, afford a pleasing contrast to the fading vegetation. The generic name *Prinos*, is of very ancient origin, having been used by Theophrastus and Dioscorides; and it is supposed to be derived from the Greek verb *πρω*, to saw; and to have been applied to this genus by Linnæus, on account of the strong serratures of the leaves in some of the species.

*Prinos verticillatus* is a shrub, of from eight to ten feet in height, found growing in and near swamps, on the borders of rivulets and ditches, and in damp woods with moist bottom, every where from



Canada to Georgia. It flowers in the month of June, and at this time it has a very ordinary appearance; but when its berries are full ripe, which is in the last part of October, and beginning of November, is strikingly beautiful. At these periods the leaves remain on; but even after they have fallen, the appearance of the shrub, from its multitude of rich crimson, and sometimes scarlet berries, is exceedingly handsome.

The stem is shrubby, and branched all the way up. The branches are alternate, horizontal, spreading, and of a bluish grey or ash-colour; the extremities, or new shoots, being greenish. The leaves are oval, tapering at their base, ending in a long point; and sawed on their edges. They are of a dark, or somewhat olive-green colour, and smooth above, but downy on the nerves and veins beneath. They are alternately arranged along the branches, and are supported by short foot-stalks. The flowers are often dioicous; small, and white, and grow together in axillary and lateral groups of from three to four in number, rarely solitary. The corolla is monopetalous, rotate; and six, sometimes seven cleft. The stamens are generally six in number. The berries are globular, and vary a little in size, as represented in the plate, but are generally of the magnitude of a marrowfat pea. As winter advances, they become of a more purplish colour. That the plant may be easily identified when sought after for medical purposes, I have represented it both in flower and fruit; but while in the latter condition, it should be

chosen for medical use. This plant was introduced into England in 1736, by Peter Collinson.

#### MEDICAL PROPERTIES.

*Prinos verticillatus*, is, perhaps, as well known among country physicians (who call it Black-Alder) as any indigenous medicinal plant of the United States. It is universally and justly celebrated as a medicine. Shoepf first publicly noticed its virtues. He says it is an "antiseptic, and is used in gangrene and jaundice." This is all he has on the subject; and the verity of his observation is proved by the fact, that at this time it is successfully employed by country practitioners and others, as an antiseptic, in cases of foul ulcers and mortification. The bark is astringent, bitter, pungent, and not very disagreeable. The first of these virtues has probably led to its use in diarrhoea, which disease Mr. Abbot says it is useful in curing. It has been, and continues to be, much used, and efficaciously, instead of Peruvian bark, in intermittent fevers and other complaints. In cases of great debility, unattended by fever, it has been highly extolled; and both its sensible properties, and well-known effects, render it probable that its reputation in such cases is merited. It has also been, used and praised, as a corroborant in anasarca and gene-

ral dropsy ; and as an antiseptic and tonic in cases of incipient gangrene.\* In these cases it is given internally, and employed at the same time, externally, as a wash. The berries participate in all the virtues already enumerated, as appertaining to the bark ; and brandy infusions or tinctures made of them, are in general use in the country, in all cases where bitter tinctures are indicated. Country practitioners combine the bark, with the root of sassafras (*Laurus sassafras*) with white-oak bark, and other things, and make a decoction of the mixture, which is much commended by them as a wash in foul ulcers, and gangrene.

Upon the whole, the *Prinos verticillatus* may be confidently recommended to the notice of physicians, as a plant possessing in an eminent degree, the properties of vegetable, astringent, and tonic medicines. And if, added to these, we take into view the antiseptic powers it is reputed to possess, it will be found deserving of no ordinary commendation. Of the last mentioned property, indeed, from experience, I know nothing ; but having used both bark and berries on several occasions, it is with no little satisfaction that I bear testimony to its deserved claim to those commendations which have been bestowed on it for the other virtues.

The bark may be used either in substance or in decoction. To the latter it readily yields its virtues ; as it also does to vinous or

\* Barton's Collections.

spiritous menstrooms. From one drachm to three, of the powdered bark, may be administered in the course of twenty-four hours. An ounce of the bark, added to a pint and an half of water, and boiled down to a pint, will make a useful decoction, which may be taken in the dose of a gill every two hours. A saturated tincture is a convenient and useful way of extracting the virtues of the plant; and this tincture may be made by mixing the bark and berries together, and letting them digest for a few days.

It may be proper to caution those who gather the *Prinos* or Black-Alder, for medical use, against mistaking for it the Candle-Alder, or Swamp-Alder, which names are applied to a species of a very different genus, the *Betula serratula*. The name Black-Alder may lead to a further mistake, since it is appropriated also to another species of *Prinos*, the *P. ambiguus*, and to the *Ilex deliculata* of Barton (*Ilex Canadensis*). It is not improbable, however, that other species of *Prinos*, besides that under notice, will be found possessed of similar medical virtues. This it would be important to inquire into.



## TABLE XVII:

- Fig. 1. Is a delineation, of the natural size, of a portion of *Prinos verticillatus* in fruit, culled on the 14th of October. A week or two after this time, the leaves fall off, and the berries are left.
2. A little piece of a flowering branch, plucked in the middle of June, with the leaves out when they begin to widen.
3. A group of flowers, consisting of three, as is common, with the scale-like bracts at the union of the peduncles.
4. The pistil.
5. A back view of the calix.





Drawn from Nature by W. T. C. Barton

James Vallentyne, Sculp.

EUPHORBIA PERACUTANHA

( American Ipecacuanha )

## EUPHORBIA IPECACUANHA.

### AMERICAN IPECACUANHA.

Ipecacuanha Spurge. Willd. Ipecac.

*Germ.* Brechenmachende Wolfsmilch. (Willd.)

*EUPHORBIA* Ipecacuanha, L. Sp. Pl. p. 653. Willd. Sp. Pl. tom. II, pars 2. p. 900. Gron. Virg. 58. ed. n. 75. Amæn. Acad. vol. 3. p. 117. Houttuyn Pfl. Syst. 7. p. 55. Mich. Fl. Boreali-Am. vol. 2. p. 212. Muhl. Cat. Pl. Am. Sep. p. 47. Pursh. Fl. Am. vol. 2. p. 606. Bart. Prod. Fl. Ph. p. 53. Pers. Syn. Pl. vol. 2. p. 14. Shoenp. Mat. Med. Am. p. 74. Puihn. Mat. Venenaria. 99. Drake's Pict. Cin. p. 87. Barton's Collections, part 1. p. 26.

### EUPHORBIA.

Gen. Plant. ed. Schreb. n. 823.

*Cor.* 4-s. 5-petala, calyci insidens. *Cal.* 1-phyllus, ventricosus. *Caps.* 3-cocca.

*Nat. Syst.* Juss. *Euphorbiæ*. Classis XV. Ordo 1.

*EUPHORBIA*, L. \* Tithymalus, T. \* Tithymaloïdes, T. \* Euphorbium, Isn. \* *Titimale*, *Euphorbe*. Hermaphrodita. Calix 1-phyllus (corolla T.) turbinatus, limbo 8-10-dentato, dentibus alternis inflexis, alternis exterioribus (petala L.) formâ variis, crassiusculis, glandulæformibus aut petaloïdeis, nunc simplicibus, nunc 2-3-fidis aut rariùs multifidis. Stamina indefinita 12 aut plura, rariùs pauciora;



filamenta receptaculo inserta, medio articulata, diverso tempore erumpentia; antheræ didymæ. Paleæ aut squamulæ (petala *Adans.*) staminibus interjectæ, definitæ aut sæpiùs indefinitæ, simplices aut sæpiùs ramosæ vel fimbriatæ. Germen inter stamina centrale stipitatum 3-gonum; styli 3; stigmata 6. Capsula stipite reflexo extrà calicem nutans 3-cocca, 3-sperma.

Juss. Gen. Plant. p. 385.

Nat. Ord. Lin. *Tricocce*.

Classis *Dodecandria*. Ordo *Trigynia*. Lin. Syst.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, inflated, somewhat coloured, with four, in some instances, five, marginal teeth, permanent. *Cor.* Petals, or Nectaries, four, sometimes five, turbinate, gibbous, thick, abrupt, unequal in situation, alternate with the teeth of the calyx, inserted into its margin by their claws, permanent, bearing plenty of honey. *Stam.* Filaments numerous, 12 or more, thread-shaped, jointed, longer than the corolla, inserted into the receptacle, coming to maturity at different periods, separated by bristly scales: anthers roundish, of two distinct lobes. *Pist.* Germen superior, roundish, three-sided, elevated on a stalk above the margin of the calyx; styles three, cloven; stigmas obtuse. *Peric.* Capsule stalked, roundish, three-lobed, of three cells, and three valves which separate elastically. *Seeds* solitary, roundish.

Obs. The petals or nectaries are for the most part four, in some flowers five, which often happens on the same plant, such flowers being furnished with stamens only, without a pistil, and coming forth earlier than the rest. In many the petals are glandular, in others crescent-shaped, or toothed; in some few thin and membranous; they are commonly situated as it were on the outside of the calix. The capsule is either smooth, or hairy, or warty.

Ess. Ch. Calix of one leaf, inflated, inferior. Nectaries four or five, inserted into the calix. Capsule stalked, three-lobed.

Ency.

*EUPHORBIA Ipecacuanha*, perennis, procumbens, pumila, glabra: foliis oppositis, sessilibus, obovalibus, oblongisve, integris: pedunculis solitariis, 1-floris, elongatis. Mich. Fl. Bor. Am.

#### SYNONYMA.

*Tithymalus*, flore exiguo viridi apicibus flavis, antequam folia emittit florens. Gron. Virg.

*EUPHORBIA protulacoides?* *Auctorum*.

## DESCRIPTIO UBERIOR.

varia; rubra vel pallido-viridis. Radix perennis, elongata, tuberculata: extra colore flava, internè albida. Caules numerosissimi dichotomi, geniculato-procumbentes, seu erectiusculi spithamæi. Folia opposita, (uno alterove ex infimis alterno) ovalia interdum lanceolata, rarius lineari-lanceolata, lævia, integerrima; nonnunquam emarginata. Pedunculi solitarii axillares, uniflori, longitudine foliorum dum florent, dein fructiferi duplo longiores. Calix crassus. Habitat in arenosis arvis, et sabulosis, florens Maio. Bart. Fl. Ph. MS.

The genus *Euphorbia*, is the *εὐφωρίων* of Dioscorides; and it was so named after Euphorbus, physician to Juba, king of Lybia.

The very singular species which is now to be described, is exclusively a native of the United States. It is extremely amorphous; varying so much in the shape of its leaves, their colour, and in fact, in the whole appearance of the plant, that in its different states it might be mistaken by those unacquainted with it, for several distinct species of the same genus \*. The root is perennial, from three to seven feet in length, and generally about three quarters of an inch, an inch, or an inch and an half in diameter. It is tuberculated, and of a yellowish colour; sending off towards its upper end, numerous

\* It is full of a milky juice, which by situation between the fingers, is convertible into cauoutchouc.

smaller roots, generally about the thickness of a crow or goose-quill, and sometimes larger. The stems are numerous, dichotomous, white under the earth or sand, and red, pale-green, or yellow above. The stipules are heart-shaped and small. The leaves are opposite, sessile ; and are generally oval, sometimes obovate, and occasionally lanceolate, as represented in fig. 5, and not unfrequently even linear. They are always entire on their margins, but sometimes, when obovate, are emarginated or notched at the apex. While the plant is in flower, in May, the leaves are very small, as in fig. 1 and fig. 2 ; when it grows older, they become much increased in size, as in fig. 3 and fig. 4. The flowers are situated on solitary one-flowered axillary peduncles, varying in length from three quarters of an inch, to three inches. The seeds are three in number, enclosed in a triangular-like capsule.

This plant is said by Michaux, to grow from Pennsylvania to Carolina. It will, I presume, be found on the sandy shores of our sea-board, from Jersey to Georgia. I have found it (in the year 1810) in the sand, near the light-house at Cape Henry in Virginia. It grows in the greatest abundance in the sandy fields of Jersey, opposite to Christian street, (of Philadelphia) and about half a quarter of a mile from the Delaware. It grows also in similar situations, along the course of the Delaware, for ten or fifteen miles below this city, and probably further. It delights in a loose, moist, sandy soil ; and is often found growing in beds of sand only. As the root alone is

used, it may be collected for medical purposes, at any time. I have found it equally efficacious, dug up in April and September.

The *Euphorbia portulacoides*, described by Kalm, and Linnæus and others on his authority, as growing "in Philadelphia," is, I strongly suspect, nothing more than the oval-leaved variety of the *E. Ipecacuanha*. I am the more inclined to this belief, from the circumstance of Linnæus, Willdenow, Kalm, and others, having described the *E. Ipecacuanha*, with only lanceolate leaves. This, we know, is rather a rare variety in the leaves of our plant. But further, I do not learn that any American botanist is acquainted with the plant termed *E. portulacoides*.

#### MEDICAL PROPERTIES.

It is not without great satisfaction that I now present the medical profession, with a figure and history of an indigenous plant, which promises to yield a medicine, equal in importance, if not on some accounts superior, to the common *Ipecacuanha* of the shops. That the *Euphorbia Ipecacuanha* is possessed of virtues entitling it to supersede the use of the imported *Ipecacuanha*, my own extensive experience with it, corroborated by the numerous trials of the medi-



cine by Professor Hewson, my brother, Dr. John Rhea Barton,\* of the Pennsylvania hospital, and others, all embolden me to declare. Previously to the experiments instituted by myself, and, at my request, by Dr. Hewson and others, little more was known of the American Ipecacuanha, than that it was possessed of emetic properties. The dose in which it operated, had not been ascertained, and indeed all who wrote of it, merely mentioned it as an emetic. The earliest printed notice of this plant that I can find is in the work of Dr. Puihn,† published at Leipsic in the year 1785. He simply notices it thus : “ *Euphorbia Ipecacuanhæ Americæ septentrionalis incolæ ut emetico utuntur.*” And Shoepf (who seems only to have seen the variety with lanceolate leaves) remarks, that this plant is called “ *Ipecacuanha,*” and observes, “ *A nonnullis, precipue incolis Borealibus temere ad vomitum ciendum interne usurpatur. Clayt*”‡ The late Professor Barton seems not to have known more of the Euphorbia than what he learned from Shoepf. He says in his Collections, “ it is employed as an emetic by some of the country people. I do not know the dose. I suppose it is small, for it be-

\* The trials of the medicine made by my brother, on the patients of the hospital, were instituted with a design of making this plant the subject of his Inaugural Dissertation. This intention was however abandoned, in consequence of learning that another gentleman had chosen the same subject.

† “ *Materia Venenaria Regni Vegetabilis,*” p. 99.

‡ *Mat. Med. Am.* p. 74.

longs to the head of drastic emetics. I am not certain that it would be a valuable addition to the *materia medica*; but perhaps it would.\*

Induced by the sensible properties of the plant, and the remarks just quoted, I last year determined to give a fair and extensive trial to the medicinal virtues of this species of Spurge. A portion of the dried root was finely pulverised, and administered with caution to various patients. I at first commenced with small doses, of three, four, and five grains. In this quantity the powder nauseated, and produced a determination to the skin, as small doses of *Ipecacuanha* do. On increasing the number of grains to ten, vomiting was produced, with occasionally an operation on the bowels. Fifteen grains I found sufficient to produce full vomiting in most cases; and in a single instance, having given the powder to the extent of twenty-five grains, I had reason to be alarmed at the violent cathartic effect which ensued, and continued for fourteen hours, attended by distressing sickness of the stomach.

I have tried this species of *Euphorbia* in Dover's powders, instead of the *Ipecacuanha*; and in various other combinations into which the latter article enters as a part: and can confidently assert, that in all the instances, it has been equal, if not superior, to the

\* Part 1. p. 26.

foreign Ipecacuanha. It has indeed some advantages which the imported article does not possess. It is not unpleasant, either in taste or smell; and it is well known that to some persons the officinal Ipecacuanha is so disagreeable that they cannot take it at all. Upon the whole, the attention of physicians may be confidently called to our native Ipecacuanha, as possessed of virtues equal, and in some respects superior to imported Ipecacuanha. Its occasional cathartic effect is no more than what follows the use of the foreign medicine, on some occasions. This view of the subject derives peculiar importance from the well known fact, that the Ipecacuanha of the shops (at least in this country) is rarely good—perhaps seldom genuine. This is not the proper place to inquire into the cause of this palpable adulteration, or whether it takes place before the article is sent to us. It is a common complaint among physicians, that it now takes twice the quantity of Ipecacuanha that was formerly necessary, to produce a full vomiting. The chemical analysis has been deferred, owing to the want of the sufficient quantity of the root. But it shall appear in the appendix, with the fourth number.

TABLE XVIII.

- Fig. 1. Represents an entire plant of the crimson variety (*E. Ipecac.* with a portion of the root. The specimen from which this figure was drawn (taken in May) had a root of the thickness of the lowest part, five and an half feet long. Where the stems are red, they appeared above the sand.
2. A portion of a specimen of the green variety, also culled in May.
3. A leaf of the variety, fig. 1, from the advanced plant.
4. Ditto of the variety fig. 2.
5. The variety with lanceolate leaves.
6. A flower with its peduncle.
7. The same with fruit.









From a plant in the garden of W. F. Fernald

From a plant in the garden of W. F. Fernald

COMPTONIA ASPLENIFOLIA.

(Sweet fern.)

## COMPTONIA ASPLENIFOLIA.

### SWEET-FERN.

Sweet-Ferry. Sweet Fern-bush. Spleenwort-leaved gale. Shrubby Sweet-Fern.

*Germ.* Streifenfarrenblättrige Comptonia. (Willd.)

*COMPTONIA asplenifolia.* Ait. Kew. 3. p. 334. Syst. Veg. 860. Sp. Pl. 1418. Willd. Sp. Pl. 4. p. 320. Pursh. Am. Sep. 2. p. 635. Mich. Am. 2. p. 203. Duham. Arb. 1. p. 366. Hort. Cliff. 456. Gron. Virg. 153. Cold. Noveb. 224. Petiv. Mus. 775. Pluk. Alm. 250. t. 100. f. 67. Houttuyn Lin. Pfl. Syst. 2. p. 346. Coxe. Disp. 3d ed. p. 399. Big. Floru. Bost. p. 219. Bart. Pr. Fl. Ph p. 88. Shoepf. Mat. Med. Am. p. 141. Amœn. Acad. 4. p. 522. Barton's Collec. part 1. p. 10.

### COMPTONIA.

Gen. Plant. ed. Schreb. n. 1764.

*Masculi:* Amentum. Cal. squama. Cor. 2-petala. Fil. bifurca.

*Feminei:* Amentum. Cal. squama. Cor. hexapetala. Styl. 2. Nux ovata.

Nat. Syst. Juss. Amentaceæ. Classis XV. Ordo IV.

Nat. Ord. Linnæi. Amentaceæ.

Classis *Monoicia.* Ordo *Triandria.*

Gen. Ch. *Male flowers.* Catkin cylindrical; loosely imbricated all round with concave, kidney-shaped, acuminate, caducous, one-flowered scales. Cal. Perianth two-leaved; leaves equal, boat-shaped,



shorter than the scale. *Cor.* none. *Stam.* Filaments three, shorter than the calix, forked; anthers six, two-valved. *Female flowers.* *Catkin* egg-shaped, closely imbricated with scales similar to those of the male. *Cal.* Perianth six-leaved; leaves opposite, in pairs, filiform, membranous at the base, many times longer than the scale. *Cor.* none. *Pist.* Germ roundish; styles two, capillary. *Peric.* none, *Seed* Nut-oval, one celled, without valves.

Ess. Ch. Male flowers in a catkin. Calix two-leaved. Corolla none. Anthers forked. Female flowers in a catkin. Calix six leaved. Corolla none. Styles two. Nut oval.

COMPTONIA asplenifolia, foliis longo-linearibus alternatim crenato-pinnatifidis. Willd. et Pursh.

## SYNONYMA.

LIQUIDAMBAR peregrinum. Syst. Veg. 860.

LIQUIDAMBAR asplenifolium. Sp. Pl. 1418.

MYRICA. Gron. Virg. 155. Cold. Noveb. 224.

GALE Mariana asplenii folia. Petiv. Mus. 773.

## DESCRIPTIO UBERIOR.

Frutex 3-ped. Caules fruticosi, ramosi, hirti. Folia longo-lanceolata, profunde alternato-sinuata. Ament. Mas. laterales, erecti, seu sub-arcuati. Ament. fœmin. rubr. Nux ossea, lenticularis, nuda, obsoletè striata, nitida. Habitat in sylvis, florens Martio et initio Aprilis. B.

THE only North American species of a genus, dedicated by Dr. Solander to the Right Rev. Henry Compton, Lord Bishop of London. It is a shrubby plant, having leaves resembling the Asplenium or Spleen-wort, and hence the specific name. It is much

branched, and attains the height of two, and from that to three, very seldom four feet. The stems are slender, branched, somewhat hairy, and are crowded with a profusion of lanceolate leaves, about three or four inches long, and half an inch broad; deeply cut into roundish notches, down nearly to the middle-rib. The male catkins are about an inch or an inch and a quarter long, lateral, sometimes erect, but most frequently horizontally curved, as represented in the plate. The female catkins are situated lower on the stems than the male, and seldom exceed half an inch in length; are ovate, of a red colour.

The fertile flowers produce little nuts of an ovate shape, flattened and margined at the base, obscurely striped, of a shining yellowish colour at the top, and nearly white towards the bottom. These nuts are sessile, and nearly concealed by the persistent segments of the corolla, which by this time are elongated and crowded, and gives to the fruit the appearance of a burr. The root is ligneous, long, and horizontal, and often extending to the length of three or four feet.

The whole plant is possessed of a strong, peculiar, resinous, and spicy scent, particularly observable when the leaves are bruised or pressed in the hand, or between the fingers.

The Sweet-fern is very common throughout the United States. Bosc remarks, that in Carolina the branches generally died at the

end of the third year, the new wood then succeeding to the old, as in the *rubi* ; and that it was also seldom found in fruit, though it flowered abundantly. The latter circumstance I have observed as regards the plant in this neighbourhood, where it is abundantly found, particularly on the high woody banks of Wissahickon creek, and in woods, and along their margins, in Jersey. It flowers very early in April, or the last of March ; and unless sought for at this early season, will seldom be found flowering ; that state of the plant continuing but a very short period.

Under the names of Sweet-fern, and Sweet-ferry, this shrub is brought in great quantities to our market, particularly by the country people, who put it up in large bunches which are sold for a few cents. My enquiries in the market for two or three years past, result in the belief that the Sweet-fern is much used, medicinally, in family practice. It is always for this purpose that it is purchased.

#### MEDICAL PROPERTIES.

Sweet-fern has been introduced into this work, principally because it is so much used in domestic practice. It is an astringent and tonic, and hence its usefulness in diarrhœa ; for it is in this

disease that it is so much employed. I frequently used it in my practice last summer, in the form of a weak decoction. It is relied on almost exclusively, by many persons, for the cure of cholera infantum; but from my trials of the plant in looseness of the bowels, in children, I do not think it ought to be so much depended on; though I have known instances in which, aided by proper regimen, it effected a cure. The decoction sweetened, forms an extremely grateful drink for children in the summer complaint; and from its moderate astringency, and bracing and tonic effect on the bowels, it will always be found to be an useful auxiliary in the treatment of this disease. I gave it last summer to one of my children, in this complaint, and with encouraging success. The other virtues ascribed to it by Shoepf, are not, perhaps, entitled to much consideration.\* Neither is the common practice in Jersey, of using the decoction as a fomentation in rheumatism and contusions, likely to result in much relief.

\* "Infusum foliorum in rhachidite, debilitate febrili, utile. Radix masticata sanguinem sistit. *Colden.*" Shoepf. Mat. Med. p. 142.



## TABLE XIX.

Fig. 1. Represents a flowering twig of *Comptonia asplenifolia*, culled in April. At this time the dead leaves of the preceding year are frequently found on the stems ; and the buds of the new leaves, only begin to appear. The long aments are the male, the short red ones, the female.

2. A branch of the plant in fruit, with the perfect leaves.

3. A stipule.

4. A collection of nuts cleared of the surrounding investment.

5. A single nut.

(All of the natural size.)





Fig. 2.

Fig. 1.

Drawn from Nature by W. T. C. Barton

Tanner, Villaver, Kearny & Co. N. Y.

ERIGERON PHILADELPHICUM.

(SCABIOUS.)

(Philadelphia Flea-bane.)

## ERIGERON PHILADELPHICUM.

### SCABIOUS.

Skevish. Philadelphia Flea-bane.

ERIGERON Philadelphicum, L. Sp. Pl. 1211. Houttuyn. Pfl. Syst. 9. p. 325. Willd. Sp. Pl. tom. 3. pars 3. p. 1957. Mich. Fl. Boreali-Am. vol. 2. p. 123. Pursh. Fl. Am. Sep. vol. 2. p. 532. Coxe. Disp. 3d ed. p. 314. Big. Fl. Bost. p. 194. Pers. Syn. Pl. vol. 2. p. 430. Ait. Hort. Kew. ed. 2. vol. 5. p. 32. Muhl. Cat. Pl. Am. Sep. ed. 2. p. 76. Barton's Collections, part 2. p. 46. Bart. Prod. Fl. Ph. p. 79.

### ERIGERON.

*Recept. nudum. Pappus pilosus. Cor. radii capillares (coloratæ).*

Nat. Syst. Juss. *Corymbiferae. Classis X. Ordo III.*

ERIGERON, L. \* Virga aurea, T. \* Aster, T. \* Flores radiati ligulis linearibus numerosis. Calix oblongus imbricatus inæqualis. Pappus pilosus. Ligulæ in aliis albidæ aut purpurascens; luteæ in aliis, quarum insuper antheræ nonnunquam basi 2-setosæ Inulas indicant.

Nat. Ord. Lin. *Compositæ discoidea.*

Classis *Syngenesia. Ordo. Superflua. Lin. Syst.*

Gen. Ch. *Common calix* oblong, cylindrical, imbricated; scales awl-shaped, erect, gradually longer, nearly equal in breadth. *Cor.* compound, radiated; *florets* of the disk all perfect, tubular, fun-



nel-shaped, with an equal five-cleft limb ; those of the radius female, ligulate, linear, awl-shaped, erect, for the most part entire. *Stam.* (in the tubular florets) Filaments five, capillary, very short ; anthers forming a cylindrical tube. *Pist.* (in the tubular florets) Germen minute, crowned with hairs longer than its own corolla ; style thread-shaped, the length of the hairs ; stigmas two, oblong, revolute ; the female or ligulate florets differ in having their corolla about as long as the hairs, and very slender stigmas. *Peric.* none, except the closed permanent calix. *Seeds* in the florets of the disk as well as of the radius oblong, small. *Down* long, capillary. *Recept.* naked, flat.

Obs. Dillenius observes that the innermost or central florets of the disk are generally males. One species has those of the radius destitute of a corolla.

Ess. Ch. Receptacle naked. Down simple. Florets of the radius linear, very narrow, numerous ; Calix imbricated. Ency.

ERIGERON Philadelphicum, pubescens ; foliis cuneato-oblongis rariter inciso-dentatis, caulinis semi-amplexicaulibus, caule debili simplici superne corymboso, pedunculis elongatis unifloris, radiis capillaceis calyce hemisphærico duplo longioribus. Willd. Mich. et Pursh.

#### DESCRIPTIO UBERIOR.

Folia oblonga lanceolata basi cordata amplexicaulia subserrata, margine tenuissime ciliata. Corollæ purpureæ capillares longitudine disci. Willd. p. 1958.

The genus, of which two species are now to be described, is the *ἔριον* of the ancient Greeks, from *ἔρως*, *the spring*, and *γέρων*, *an old man*, because the plants which gave rise to the name were hoary in the spring.

The *Erigeron Philadelphicum* is an herbaceous perennial plant, two or three feet in height, much branched at the top. The root is

branched, somewhat fibrous, and of a yellowish cast. The branches are pubescent. Radical leaves, ovate-lanceolate, on long petioles, and occasionally having one or two serratures. Upper leaves lanceolate, entire sessile, and somewhat amplexicaule. Flowers numerous, erect, situated on a large diffuse pannicle. Calix hemispherical. Florets of the ray capillary, whitish, or blue; sometimes purplish. It grows in the greatest profusion in all the fields near Philadelphia; and it ranges extensively throughout the United States, in similar places. It begins to flower in July, and continues blooming through the month of August. It should be collected for medical use while in flower.









Drawn from Nature by W. P. C. Barton

James, Vallance, Kearny, & Co. sc

ERIGERON HETEROPHYLLUM.

( Sweet Scabious. )

## ERIGERON HETEROPHYLLUM.

### SWEET-SCABIOUS.

Various-leaved Flea-bane.

*Germ.* Verschiedenblättriges Berusungskraut. (Willd.)

Jährige Sterneblume. (Willd.)

*ERIGERON heterophyllum.* Muhlenb. in Litt. Willd. Sp. Pl. tom. 3. pars 3. p. 1956. Willd. Sp. Pl. tom. 3. pars 3. p. 2041. Ait. Kew. 3. p. 209. Hort. Cliff. 409. Hort. Ups. 262. Roy. Lugdb. 169. Mill. Dict. n. 28. Fl. Dan. 486. Hoff. Germ. 297. Roth. Germ. I. 367. II. 357. Moris. Hist. 3. p. 122. Cor. Canad. 193. t. 194. Houttuyn Lin. Pfl. Syst. 9. p. 386. Muhl. Cat. Am. Pl. p. 76. Pursh. Fl. Am. Sep. vol. 2. p. 534. Pers. Syn. Pl. vol. 2. p. 431. Bart. Prod. Fl. Ph. p. 79. Suter. Fl. Helvetica. vol. 2. p. 185.

*ERIGERON heterophyllum*, foliis radicalibus subrotundo-ovatis profunde dentatis petiolatis, caulinis lanceolatis acutis medio subserratis corymbo terminali. Willd. Sp. Pl. p. 1956.

### DESCRIPTIO UBERIOR.

Folia radicalia longè petiolata subrotundo-ovata profundè et grossè dentata, petiolo subalato bidentato; inferiora caulina bipollicaria sessilia ovata acuta utrinque serraturis profundis tribus notata triplinervia; superiora lanceolata acuminata vel integerrima, vel serraturis binis acuminatis utroque la-

tere instructa, ut radicalia et inferiora glabra atque margine tantum setis rigidis ciliata. Corymbus terminalis fastigiatus. Corollæ radii albæ filiformes copiosæ. Pili in caule breves patentes. Willd. Sp. Pl. tom. 3. 1956.

*ERIGERON heterophyllum* is a plant common to Europe and North America. It is the *Aster annuus* of Linnæus, and is twice described by Willdenow, in his *Species Plantarum*; under the different names of *Aster annuus* and *Erigeron heterophyllum*. There remains no doubt, however, at this time, of the identity of these two plants.

Sweet-Scabious is as common a plant in the United States, as its companion, the Philadelphia Flea-bane, and is always found growing with it. Its geographical distribution, therefore, throughout our States, is the same as that of the *E. Philadelphicum*. By the common people, the two plants are distinguished by the names Scabious and Sweet-Scabious, for what reason cannot be satisfactorily learned. The vulgar epithet Skevish, is sometimes applied to the species under consideration, as well as to the *E. Philadelphicum*.

The root of Sweet-Scabious is like that of the preceding species. It sends up from three to five stems, which are very much branched above, and attain the height of two or three feet. The stems are roundish, striated, pubescent, and about the thickness below, of a pipe-stem, gradually tapering towards the top, where it is divided into numerous spreading branches. The primary branches



are considerably shorter than the secondary, and flower first. The radical leaves are ovate, acute, deeply toothed, and supported by broad winged petioles, half the length of the leaves. The stem-leaves are sessile, lanceolate, acute, deeply sinuated, or remotely serrate-toothed in the middle. The leaves of the branches are lanceolate, entire, and closely sessile. All the leaves, except those from the root, are ciliated at and near the base, as represented in the plate. The flowers are borne in terminal, rarely lateral, corymbs; are numerous, and resemble those of *E. Philadelphicum*. The florets of the disk are bright yellow, and the ray-florets capillary, numerous, white, pale-blue, and sometimes pale-purple. The whole plant is of a dark or deep-green colour, in which circumstance it strikingly differs from the preceding species. It grows, as has been already mentioned, with its congener, just described; and in the neighbourhood of Philadelphia, it is nearly as abundant.

**MEDICAL PROPERTIES OF ERIGERON PHILADELPHICUM AND  
ERIGERON HETEROPHYLLUM.**

These two plants are introduced into this work, on account of their diuretic qualities. The *E. Philadelphicum* has been known for some years, as a diuretic; and it has been much used and com-



mended in gravelly and gouty affections.\* I have been informed by Mr. Samuel Hazard, that his father, the late Ebenezer Hazard, of this city, was in the constant practice, for years before his death, of using the decoction of the plant, on the commencement of an attack of gout, and with much relief of its pains, as well as of some gravelly symptoms to which he was subject. It has been much praised for its remediate virtues in calculus ; and has been used in some few instances of dysury by Dr. Physick. He informed me that in a case of this kind, attended with great pain and irritability of the bladder, the patient found much relief by taking decoctions of the plant for a few weeks. Scabious has also been prescribed in cases of hydrothorax combined with gout ; in ascites, and in general dropsy ; and those who have given the medicine in these cases, report the most beneficial effects to have been produced. In a consultation letter from the late Dr. Wistar to Dr. Eberle, put into my hands by the latter gentleman, it appears that the doctor recommended the Scabious in the case of the late Judge Yates, of Lancaster, who was affected with gout and general dropsy, attended with distressing pain in the bowels, and so disordered a state of the stomach, that the squill could not be administered ; yet it was necessary to give some active diuretic. “ I once attended a gentleman,” says Dr. Wistar, “ who suffered with gout and hydrothorax ; the squill produced great disturbance and pain of the stomach, and thus did

\* Loureio says it is commended for its emenagogue virtues, by the people of Cochinchina, who call it *cay con hat*.

more harm than good. This gentleman was greatly relieved by the infusion of Scabious, which he took *very freely*.<sup>\*†</sup> Dr. Eberle accordingly administered the decoction in this instance, and he informs me with great relief to the Judge. He was, from this circumstance, subsequently induced to prescribe it to a patient † affected with anasarca, who found the most essential relief from the medicine.

On learning from Dr. Physick that he procured the plant at the Friends' alms-house of this city, I found, by examining the herbs vended by the inhabitants of that place, under the name of Scabious, that they were the two species just described; and that they were sold indiscriminately for one article. At the same time I was informed that one (the *E. heterophyllum*) was commonly known, and brought to them by their herb-collectors, under the name of Sweet-Scabious. In consequence of this information I made many trials of the last mentioned species, and found it possessed of active diuretic and sudorific virtues, like the *E. Philadelphicum*. I have every

\* Dr. Wistar sent a box full of this Scabious to Dr. Eberle, for the use of the judge; and as Dr. Wistar had informed me that he procured the plant whenever he thought proper to prescribe it, at the Friends' alms-house, it is probable that the quantity sent to Lancaster was procured there. Consequently it was composed of two species, as may be seen in a subsequent part of the text.

† The late Paul Zantzinger, Esq. of Lancaster.

reason to believe, that both plants are deserving the attention of physicians, for the medicinal powers which have given them a place in this work ; and there is great probability, from the similarity of the two plants, that the *Erigeron heterophyllum* has a just right to participation, in the reputation bestowed on the other species. They have certainly been confounded with each other by all but botanists ; and used indiscriminately under one common name, and of course with the same object in view.

These plants should be gathered for medical use, while in flower, and carefully dried in wrapping paper. They should be used in decoction to the extent of a pint or two, in the course of twenty-four hours. Mr. Hazard's case, and the encouraging relief met with by Dr. Physick in the case above mentioned, as well as the one alluded to by Dr. Wistar, justify me in strenuously recommending the plants to the notice of physicians. My own experience with both species enables me to bear testimony to their diuretic virtues. If they be not among the most powerful medicines of this class, they have the estimable property of being innocent to the stomach. This organ will not reject the decoction of these herbs when it is so disordered and irritable as to render the squill, digitalis, &c. intolerable. I have used a strong decoction of the two plants, in a case of nephritis, at the Naval Hospital ; and with great relief of the difficult and painful micturition so constantly attendant on this disease. My success, in the instance alluded

to, far exceeded my sanguine expectations, and emboldens me, with some degree of confidence, to recommend the Scabious in similar cases, for the relief of this distressing and troublesome symptom.

TABLE XX.

Fig. 1. Is a figure of the upper portion of *Erigeron Philadelphicum*, of the natural size, in flower. The blue variety is here represented, because of the greater facility of figuring blue than white flowers; at least of such a form as these. The white variety is more common.

2. The lower portion of the same, cut asunder at the asterisk.



## TABLE XXI.

- Fig. 1. Represents the upper portion of *Erigeron heterophyllum*, of the size of nature ; the primary branch just past flowering, the secondary, or external branches, in full bloom. The ray-florets are rarely pure white, generally of the colour represented ; and from this, gliding imperceptibly into purple.
2. The lower or radicle portion of the same, having had, between this and the upper part, twelve inches of the stem cut away.





Painted by W. L. ...

Anna Collins Kearney & Co.

ASCLEPIAS TUBEROSA.

( Butterfly weed. )

## ASCLEPIAS TUBEROSA.

### BUTTERFLY-WEED.

Pleurisy-root. Flux-root. Wind-root. White-root. In England, Tuberous-rooted Swallow-wort.  
Orange Apocynum.

*Germ.* Knollige Schwalbenwurz. (Willd.)

*ASCLEPIAS tuberosa*. L. Sp. Pl. 316. Hort. Cliff. 78. Roy. Lugdb. 411. Herm. Lugdb. 646. t. 647. Dill. Elth. 35. t. 30. f. 34. Houttuyn Lin. Pfl. Syst. 5. p. 791. Willd. Sp. Pl. tom. 1. part 2. p. 1273. Pursh. Fl. Am. Sep. vol. 1. p. 183. Walt. Fl. Car. Ait. Hort. Kew. ed 2d, vol. 2, p. 80. Mich. Fl. Boreali-Am. vol. 1. p. 117. Muhl. Cat. Pl. Am. p. 28. Big. Florula Bost. p. 63. Bart. Prod. Fl. Ph. p. 35. Thatcher's Disp. p. 154. Coxe's Disp. 3d. ed. p. 214. Chapman's Elem. Therap. &c. vol. 1. p. 346.

### ASCLEPIAS.

Gen. Plant. 429.

*FOLLICULI* 2. *Sem.* papposa. *Cor.* rotata, plerumque reflexa. *Nectar.* 5. ovata, concava, corniculum exserentia. *Anther.* cornæ, longitudinaliter dehiscentes. Willd.

*Nat. Syst. Apocineæ.* Classis VIII. Ordo XIV.

*ASCLEPIAS*, T. L. \* *Apocinum*, T. \* *Calix* 5-fidus, parvus persistens. *Corolla* obtusè 5-partita, plana aut reflexa; *squamæ* 5-ejusdem laciniis alternæ, *staminum* tubo extus insertæ, *genitalibus* appressæ,



in cucullum convolutæ, & è medio cucullo corniculum exserentes. Stamina filamenta coadunata in tubum crassum 5-gonum, germina arcuè involvens, ex imâ corollâ enatum, suprâ clausum stigmatè truncato, & ipsi quasi continuum, in angulis 5-sculcatum, in faciebus 5-antheriferum; antheræ sessiles medio tubo extûs insertæ erectæ 2-loculares, polline vacuæ, apice membranaceæ, corollæ laciniis alternæ. Stylus 0; stigma peltatum 5-gonum, tubo supradicto impositum, ex foveolis 5-angularibus emittens corpuscula 5 ovata minima, antheris alterna, et ideò corollæ laciniis opposita, 2-valvia, valvis latere productis, infrâ 2-cornia; cornua hæc exilia propendunt basi subulata, medio geniculata, ultrâ spatulata & granulata (ex concreto polline facta?); horum singulum in proximo vicinioris antheræ loculum immersum, undè 1 corpusculum antheris 2 commune & 1 anthera corpusculorum 2 particeps. Folliculi oblongi acuminati, sæpè ventricosi; semina papposa.

Juss. Gen. Pl. p. 147.

Nat. Ord. Linnæi. *Contortæ*.

Class *Pentandria*. Order *Digynia*. Lin. Syst.

Gen. Ch. *Cal.* perianth five-cleft, sharp, very small, permanent. *Cor.* Monopetalous, flat or reflex, five-parted; divisions ovate-acuminate, slightly bending with the sun; nectaries five, growing to the tube of the filaments, fleshy or cowled; a sharp horn protruding from the bottom, bending inwards. *Stam.* filaments five, collected into a tube, swelling at the base; anthers oblong, upright, two-celled, terminated by an inflex membrane lying on the stigma, having a reversed wing on each side; the pollen is collected into ten corpuscles, inversely lanceolate, flat, hanging down into the cells of the anther by short threads, which are annexed by pairs to five cartilaginous twin tubercles, each placed on the tip of the wings of the anthers, adhering to the angles of the stigma, between the anthers. *Pist.* germs two, oblong, acuminate; styles two, subulate; stigma common to both, large, thick, five-cornered, covered at the top by the apexes of the anthers, umbilicate in the middle. *Per.* follicles two, large, oblong, acuminate, swelling, one-celled, one-valved. *Seeds*, numerous, imbricate, crowned with down; receptacle membranous, free.

Ess. Gen. Char. Contorted; nectaries five, ovate, concave, putting forth a little horn.

*ASCLEPIAS tuberosa*, caule, erectiusculo summitate divaricato-ramoso, hirsutissimo, foliis sparsis oblongo-lanceolatis hirsutis, umbellis subcorymbosa-terminalibus. (Willd. and Pursh.)

β *decumbens*. A. caule decumbente, foliis sublinearibus hirsutissimis umbellis lateralibus. (Willd.)

SYNONYMA.

A. Caule erecto divaricato villosa, &c. Hort. Cliff.  
Apocynum novæ Angliæ hirsutum, &c. Herm. Lugdb.

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Pharm. *Asclepiadis tuberosæ* Radix.

Qual. Leniter adstringens.

Vis: Diaphoretica 3i

Usus: Colica, pulv. radic. Hysteria. Hæmorrhagiæ; decoct. aquos. Dysenteria, decoct. vinosum! Shæpf. Mat. Med.

DESCRIPTIO UBERIOR.

Planta pulchra. Radix perennis quasi tuberosa. Caules varii, plerumque erecti, pilosi, rubri, circiter duobus pedibus alti. Folia numerosa, brevius petiolata, alterna, semper pilosa, lanceolata-ovalia, lanceolata; in varietate  $\beta$  decumbente, lanceolata-linearia. Flores corymboso-terminales, numerosi, colore Aurantii nitentes. Siliquæ longæ, seminibus planiusculis refertæ. Semina dum maturescerint, cumque siliquæ dehiscere cæperint, pappo coronato, ventoque afflata, avolant. Habitat in arvis, floret Julio.

Bart. Fl. Ph. MS.

THE genus to which this superb plant belongs, takes its name from Æsculapius, the god of medicine. It contains an assemblage of some of the most beautiful productions of the vegetable king-

dom ; and the *A. tuberosa*, is, perhaps, one of the most elegant plants of our country.

The root is large, and somewhat irregularly tuberous, sending up many erect, and sometimes decumbent hairy stems, branching at the top. The stems are round, very hairy, and of a reddish colour. The leaves are scattered, and supported on petioles little more than the eighth of an inch in length ; varying in being lanceolate-oval, long-oval, lanceolate, and in the variety  $\beta$  *decumbens*, linear-lanceolate, and repand on the margin. They are of a deep rich green above, much paler underneath, and very hairy. The umbels are terminal and somewhat in the form of a corymb ; in the variety  $\beta$  they are lateral. The bracteal involucre is composed of numerous narrow-linear, nearly subulate membranaceous leaves, of a salmon colour. The flowers are situated in terminal corymbose umbels, and are of a brilliant reddish-orange colour. The fruit is a long narrow roundish pod, pointed at each end : and the seeds, like the rest of the genus, are furnished with a long silky appendage. The plant continues for a long time in bloom, at which time its rich green leaves contrasted with its gorgeous inflorescence, render it an universal favourite. Its geographical distribution is extensive, being found from the northern states to the southern boundary of the Union ; but it is most abundant in the Carolinas and Georgia. In the neighbourhood of Philadelphia it is somewhat rare ; but is more frequent in Jersey. It is generally found in

fields, sometimes in meadows ; and flowers in the months of June and July. The root alone is used for medical purposes.

#### MEDICAL PROPERTIES.

So many estimable qualities are usually attributed to this very favourite plant and popular medicine, that it is not easy to assign it a proper place in the *Materia Medica*. If the butterfly-weed is deserving of half its reputation, it is richly entitled to a distinguished rank in this work ; and so numerous and respectable are the authorities in support of its celebrity, that it is with considerable diffidence I venture to lessen, in the least degree, its elevated character as a medicine, by the intimation of any doubts of its just claim to its present undisputed reputation. My own experience with it is confined to a few trials in cases in which it is reputed to be peculiarly beneficial ; and these have resulted in an opinion, that there is some foundation for the encomiastic accounts of this medicine. It may be safely, nay confidently recommended to physicians, as a mild cathartic, particularly suitable to the complaints of children, as it leaves the bowels in a tranquil condition ; and as a certain diaphoretic, attended with no inconsider-



able expectorant effect. But a regard for truth obliges me to state that the virtues of this plant are, as far as my experience extends, considerably exaggerated, there being ascribed to it a multitude of powerful, extraordinary, and almost inestimable properties, to which its virtual character affords no substantial claim. It must be remembered, however, that these remarks are not intended to stigmatise the Pleurisy-root as worthless, for I deem it a valuable article ; my only object is to endeavour to present to the public its prominent virtues, divested of what, in my own opinion, is an aggregation of imputed but unreal qualities. A gentleman of Virginia who, judged by his own writing, is evidently not a regular physician, first brought this plant into very general notice, as a cure for the pleurisy. He has been quoted by the late Professor Barton, and subsequently by the compilers of the American dispensaries ; and thus have his exaggerated accounts been extensively diffused throughout our country, without any other good effect, perhaps, than that of bringing a plant into general notice, which really possesses medicinal virtues, though not of the nature and number specified in those accounts. To the gentleman alluded to, however, is not to be imputed the discovery of the remediate effects of pleurisy-root. Dr. Shæpf mentions the plant, and specifies the property for which it seems to me most probable, it will become useful : its effect in inducing diaphoresis. He says it is a diaphoretic in the dose of one drachm ; that it is slightly astringent ; that the powdered root is useful in cholic ; an aqueous decoction, in hysteria and menorrhagia ; and a vinous decoction in

dysentery. This account by Dr. Shœpf, of the "*Asclepias tuberosa*," as he calls it, inadvertently escaped the attention of the late Professor Barton, else he would, it is presumable, have quoted this author, when speaking of the plant in question. Under the names "*Butterfly-root*, *Pleurisy-root*," Shœpf also speaks of the use of some plant, in pleurisy and febrile diseases; and then tells us, on the authority of the late Rev. Dr. Muhlenberg, that the name of *Pleurisy-root* was applied to the *Asclepias tuberosa*, and that a decoction of it was esteemed a certain remedy for pleurisy.\* The late Professor Barton informs us† that the root of this plant "is said to possess a remarkable power of affecting the skin, inducing general and plentiful perspiration, without greatly increasing the heat of the body"—that "it is much employed by practitioners of medicine in some parts of the United States, particularly I believe, in Virginia, as a remedy in certain forms of fever, in pleurisy, and other affections. The root is used both in powder and in decoction. Sometimes it is used in combination with antimonials." He further says

\* *Butterfly-root* ; *Pleurisy-root*. Hoc nomine in Terra Mariana Radix quædam insignitur, alba, crassitie digiti auricularis, cujus virtutes incolæ in Pleuritide, aliisque morbis febrilibus, magni faciunt. Plantam non vidi; nomen vero, illam ad Diadelphiam pertinere, suadet. — Sapor est mucilagineo-dulcescens, amaricans.

In Pennsylvania nomine *Pleurisy-root*. Radix Asclepiadis tuberosæ venit, cujus particula, dimidium pollicem magnitudine æquans, decocta pro remedio certissimo adversus Pleuritidem habetur, ut nuper e literis Ven. *Muhlenbergii* didici.

Mat. Med. p. 160.

† Collections.

that the decoction "often induces perspiration when other medicines have failed to produce this effect," and on the authority of a correspondent\*, that in the low states of typhus fever, it induced perspiration when other sudorifics failed. In a letter which I have received from a physician in Wrightstown, † it appears, that the *Asclepias tuberosa* is in frequent use by the regular practitioners, as a gentle cathartic in difficult dentition, and as a diaphoretic. To produce the latter effect the writer of the letter gives the following as a proper recipe :

Rad. asclep. ʒii }  
Lac recens ʒxviii }

boiled down to ʒxii. One ounce of the decoction to be given twice or thrice in twenty-four hours, which excites a copious perspiration, and proves at the same time gently cathartic.

It may be said with truth, that the *Asclepias tuberosa* is a certain, and of course an useful diaphoretic ; whether it acts in this way, as it is said to do, without increasing the force of the circulation or augmenting the heat of the body, I am not prepared by any extensive use of the plant, to aver ; at the same time it must be confessed, that in the few instances in which my employment of this medicine has presented to me a view of its effects, the plant has

\* Dr. Charles Everett, of Milton.

† Stephen Burson, M. D.



supported its reputed character in this respect. And the multitude, respectability, and strength of evidences in favour of this very desirable quality, leave no room to suppose that the plant has received, so far, any undue encomiums. Its expectorant effect in pneumonia and catarrha, is substantiated by a multiplicity of corroborative facts, the relation of which is derived from physicians of undoubted respectability. The late Professor Barton esteemed the *Asclepias tuberosa*, as one of the most important of our indigenous medicines: and he says the powdered root is escarotic. When taken internally, the dose is from 20 to 30 grains of the powder. This article may be concluded with the following quotation from Thatcher's Dispensatory. The extensive experience of the gentleman there alluded to, with the plant under consideration, is entitled to great attention:

“The powdered root frequently acts as a mild purgative, but it is particularly valuable for its virtues as an expectorant, diaphoretic, and febrifuge, and in this respect its efficacy is amply confirmed by the testimony of Dr. Benjamin Parker, of Bradford, Massachusetts, from his own observation during an extensive practice for many years in Virginia. From the successful employment of the Pleurisy-root for twenty-five years, this respectable physician has imbibed such confidence, that he extols it as possessing the peculiar, and almost specific quality of acting on the organs of respiration, powerfully promoting suppressed expectoration, and thereby



relieving the breathing of pleuritic patients in the most advanced stage of the disease ; and in pneumonic fevers, recent colds, catarrhs and diseases of the breast in general, this remedy has in his hands proved equally efficacious. He directs it to be given in the form of strong infusion, a tea-cup full every two or three hours. By many families in the country this root has long been esteemed as a domestic medicine, resorted to for the relief of pains of the stomach from flatulence and indigestion ; hence the vulgar name of *Wind-root*, by which it is known in some parts of the country, and from its colour it is by some called *White-root*. It is said that by a perseverance for several weeks in the use of about one drachm of the powdered root every day, the lost tone of the stomach and digestive powers has been restored."

## TABLE XXII.

Fig. 1. A branch of *Asclepias tuberosa*, of the natural size.

2. A flower.

3. The Nectary.

4. The calix and germ.





Drawn from Nature by W. P. C. Barton

James Vallance Kearny & Co.

CONVOLVULUS PANDURATUS.

( Middle leaved Bind weed. )

## CONVOLVULUS PANDURATUS.

### FIDDLE-LEAVED BIND-WEED.

Wild-Rhubarb. Mechamech of the Indians. Mecoacanna. Wild Potatoe. Hog Potatoe—In Virginia  
Wild Potatoe vine; (*the root*, Kussauder, or Kassader, in the state of Delaware.) Virginian  
Bind-weed, in England.

*Germ.* Geigenblättrige Winde. (Willd.)

*CONVOLVULUS panduratus*. L. Sp. Pl. 219. Gron. Virg. ed. n. 28. Shoepf. Mat. Med. Am. p. 21. Barton's  
Collections, part. 1. p. 30, 56. part 2. p. 49. Dill. Elth. 101. t. 85. f. 99. Houttuyn Lin. Pfl. Syst.  
5. p. 523. Pursh. Fl. Am. Sep. vol. 1. p. 144. Mich. Fl. Boreali-Am. vol. 1, p. 138. Pers. Syn.  
Pl. vol. 1. p. 178. Bart. Prod. Fl. Ph. p. 29. Coxe, Am. Disp. ed. 3. p. 284. Ait. Hort. Kew. ed.  
2. vol. 1. p. 327.

### CONVOLVULUS.

Gen. Plant. 287.

*Caps.* 2-3-locularis. *Cor.* Campanulata, 5-plicata.

*Stigm.* 2 filiformia. *Cal.* nudus aut bibracteatus.

Nat. Syst. Juss. *Convolvuli*. Classis VIII. Ordo IX



CONVOLVULUS, T. L. \* Liseron Calix 5-partitus. Corolla campanulata aut rariùs infundibuliformis, limbo 5-plicato sæpiùs integro angulato, angulis acutis aut dentatis. Stamina inæqualia, filamentis approximatis. Germen glandulæ hypogynæ semi-immersum; stylus 1; stigma 2-fidum. Capsula sæpè 3-locularis, rarò 2-4-locularis, loculis 1-2-spermis, quibusdam interdùm abortivis. Herbæ lactescentes, plurimæ volubiles; pedunculi axillares aut terminales, 1-flori 2-bracteati, aut multi-flori. Species paucissimæ fructiculosæ. Juss. Gen. Plant. p. 134.

Nat. Ord. Vent. *Convolvulaceæ*.

Nat. Ord. Lin. *Campanaceæ*.

Classis *Pentandria*. Ordo *Monogynia*.

Gen. Ch. *Cal.* perianth five-cleft. *Cor.* monopetalous, bell-shaped or funnel-shaped, plaited; border generally spreading, more or less five-lobed. *Stam.* filaments five, awl-shaped, shorter than the corolla, approximating at the base. *Pist.* germ superior, roundish; stile filiform; stigma simple or bifid. *Peric.* capsule surrounded by the calix, roundish; one, two, three, or four-celled; one, two, three, four, or many-valved. *Seeds* one or two in each cell.

Ess. Ch. Five-cleft. Corolla bell or funnel-shaped. Stigmas one or two. Pericarp a capsule, or dry berry. Seeds one or two in each cell.

Obs. Authors often call the calix five-leaved, when it is very deeply five-cleft. Ency.

CONVOLVULUS panduratus, volubilis, pubescens; foliis lato-cordatis integris lobatisve panduriformibus, pedunculis longis, floribus fasciculatis, calicibus glabris muticis, corollis subulato-campanulatis.

#### SYNONYMA.

CONVOLVULUS megalorhizus. Dill. Elth.

C. foliis cordatis integris panduriformibus, calicibus lævibus. Sp. Pl. 219.

C. foliis inferioribus cordatis, superioribus trilobis, calicibus pedunculis petiolisque glabris, caule rubescente. Gron. Virg. 141.

---

Pharm. Convolvuli pandurati, *Radix*.

## DESCRIPTIO UBERIOR.

*Radix* perennis, elongata, cylindrica. Caulis herbaceus volubilis, pubescens, teres. Folia longè petiolata, lato-cordata seu lobata, lobis rotundatis obsoletioribus, integra acuminata. Pedunculi folio longiores, teretes. Flores fasciculati. Corolla magna campanulata, alba, fundo rubro-purpurascens. Bractæ vix ullæ, sed sæpe squamæ 2 obsoletæ. Stamina longitudine tubi, alba. Pistillum album, vix longitudine staminum; stigma capitatum, album. Habitat in arenosis arvis, florens Junio et Julio.

Bart. Fl. Ph. MS.

THE genus *Convolvulus*, (so called *a convolvendo*, because many of the species are twining) contains a vast number of species, of which about sixteen are natives of this country. The one under present notice, derives its specific appellation from the shape of its leaves, which are frequently panduriform, or fiddle-shaped.

The root is perennial, very large, cylindrical, and full of longitudinal fissures. It is generally about the thickness represented in the plate, and about two or three feet long, branched at the bottom; of a yellow-ochre colour. I have seen specimens, however, of greater dimensions. The stem is twining, often procumbent on the earth, and not unfrequently climbing round fence-posts. It is round, of a greenish-purple colour. The leaves are broad, heart-shaped, entire, lobed, panduriform, somewhat acuminate, (deep green above and lighter underneath) situated on long petioles. Flowers

in fascicles; calix smooth, awnless, corolla subulate-campanulate, white, with the tube purplish-red at the base, both externally and within. The peduncles and petioles have a common origin, and are arranged in pairs. The flower-buds are of a purplish-red hue at first, and when further advanced, are straw-colour. The plant flowers from June to August. It will be found every where in sandy fields, and by fences, from Canada to Florida.

#### MEDICAL PROPERTIES.

The root of this plant, in larger doses than jalap, is mildly cathartic. Its operation is somewhat like that of rhubarb. But it has not obtained a place in the American dispensatories, for its cathartic property; and, it must be confessed, it is doubtful whether it possesses this virtue to any such extent, or in any such peculiar manner, as to entitle it to particular notice on this account. It is for its reputed power as an antilithic, that I have introduced it here. The plant has certainly acquired no inconsiderable repute, as a remedy for calculous affections. A decoction is said to have been used with great success, by a physician of New Jersey,\* who

\* Dr. Harris—see Barton's Collections.

was enabled, by its use, to pass calculous granulæ with facility. It appears also, that in Virginia, and some other parts of the United States, the root of this plant, taken either in powder or decoction, has been recommended in cases of gravel.\* Perhaps it is diuretic. Hitherto it has received but little attention among regular practitioners of medicine. It has, however, been employed among empirics, but for what purpose it is not easy to learn. I have seen it collected for their use, but, as may be supposed, any enquiries as to the object for which it was procured, resulted in no certain information. The constant habit of secrecy observed by these impostors, screens from the view of the profession, occasionally, active and useful articles. Of the medical virtues of the plant in question, I know nothing from experience, having never used it in any form.

Shoepf informs us that it grows plentifully round Bethlehem, (Penn.) where its root is collected and sold for Mechoacanna, and that it has the same virtues and appearance as that article.†

\* Barton's Collections.

† Mat. Med. Am. p. 21.



## TABLE XXIII.

A representation of a portion of *Convolvulus*, with a portion of the root, of its common size. The whole of the root is buried under the ground.





SABBATIA ANGULARIS.

(Centaur.)

## SABBATIA ANGULARIS.

### CENTAURY.

American Centaury. Centory. Centry. Angular-stalked Sabbatia.

*Germ.* Eckige Chironie. (Willd.)

*SABBATIA angularis*, Adanson, *Parad. Lond.* t. 32. *L. Sp. Pl.* 272. Houttuyn *Pfl. Syst.* 5 p. 701. Willd. *Sp. Pl.* tom. 1. p. 1067. Schoepf, *Mat. Med. Am.* p. 27. Pursh, *Fl. Am. Sep.* vol. 1. p. 137. Barton's Collections, part 2. p. 15. Mich. *Fl. Boreali-Am.* vol. 1. p. 146. Pers. *Syn. Pl.* vol. 1. p. 282. Thatch. *Disp. ed. 2d.* p. 180. Coxe *Disp. ed. 3d.* p. 259. Bart. *Prod. Fl. Ph.* p. 32. Muhl. *Cat. Pl. Am. Sep.* 23.

### SABBATIA.

Adanson. *Parad. Lond.* t. 32.

*Caps.* 1-locularis. *Cor.* tubo urceolato, limbo 5-12-partito. *Stigm.* 2-partitum; laciniis spiralibus. *Anth.* demum revoluta.

*Nat. Syst. Juss. Gentiane.* Classis VIII. Ordo XIII.

*Nat. Ord. Lin. Rosaceæ.*

Classis *Pentandria*, Ordo *Monogynia*. *Lin. Syst.*

*Gen. Ch.* *Cal.* Perianth one-leafed, five-cleft, erect, permanent; segments oblong, acute. *Cor.* monopetalous, salver-shaped, or almost wheel-shaped, regular; tube scarcely longer than the calix; border five-cleft, spreading; segments egg-shaped, open. *Stam.* Filaments five, short, attached



to the tip of the tube : anthers oblong, erect, converging, spirally twisted after shedding the pollen. *Pist.* Germ superior, egg-shaped ; style filiform, a little longer than the stamens, declining ; stigma capitate, ascending. *Peric.* Capsule or berry egg-shaped, two-celled. Lin. Smith (one-celled ; Lam. Gært.) valves inflexed. Smith. *Seeds* numerous, small, attached to the sides of the receptacle.

**Ess. Ch.** Corolla salver-shaped. Stamens inserted into the tube ; anthers finally becoming spiral. Style declining. Pericarp superior, two-celled ; valves inflexed. Smith.

**Obs.** In some of the species the anthers have not been observed to become spiral.

**SABBATIA** *angularis*, erecta ; foliis ovatis amplexicaulibus, pedunculis elongato-corymbosis, calice corollæ semibreiores, laciniis lanceolatis, caule marginato-quadrangulo. Pursh. Fl. Am.

#### SYNONYMA.

**CHIRONIA** herbacea, caule acutangulo, foliis ovatis amplexicaulibus. Sp. Pl.

**CHIRONIA** *angularis*. Willd. Sp. Pl. Mich. Muh. &c.

---

**Pharm.** *Sabbatiæ angularis herba.*

**Qual.** Aromatica, amara.

**Usus.** Infusum in febris.

#### DESCRIPTIO UBERIOR.

**Facies** *Chironiæ Centaurii*. Caulis pedalis, tetragonus : alis membranaceis. Folia ovata (acuta) opposita, sessilia et semi-amplexicaulia. Flores congesti, ut in *Hyperico* ; antheræ spirales ; stylus bifidus.

Willd. Sp. Pl.

**THE** subject of this article is a very elegant plant. It is universally known by the different names enumerated above, through-

out the United States, and it is no less valued for its medicinal virtues than admired for its beauty.

The root is annual ; it consists of a few thick yellowish-white fibres, and sends up a single stem (rarely two) simple below, but very much and regularly branched above. The stem is herbaceous, from one foot to eighteen inches high, smooth, four-sided, with membranous wings at the angles. The branches are axillary, and of a similar structure. The leaves are opposite, ovate, acute, closely sessile, or nearly amplexicaule, three nerved. They vary, however, in being longer and narrower. The flowers are very numerous, growing at the extremities of the branches, in numbers from two to five ; are of a beautiful rose-red colour above, much paler and nearly white in the centre underneath, which gives to the buds a white appearance. In the centre of the corolla there is a defined, pentangular star, of a rich yellow colour, bordered with green. The petals are obovate, and vary in being narrower, sometimes nearly lanceolate-obtuse. The calix consists of five narrow acute, or almost subulate segments, little more than half the length of the corolla. The anthers are spiral, of a rich yellow colour. The plant is in full flower in July.

*Sabbatia angularis* is a common plant, being extensively distributed throughout the Union. It is most frequently found in low

meadow grounds, but not uncommonly on hills, and in neglected fields. It grows abundantly in the swampy grounds near Woodbury, New Jersey, and on the high banks of the Schuylkill, and hilly fields, on the Woodlands, near this city. In the months of August and September, it is brought in vast quantities to our market, by the Jersey people, and those who come from the neighbourhood of West-Chester (twenty miles from Philadelphia). Near the latter place I have been informed by the market people, it grows in great profusion; and indeed this is evident from the quantities they bring of it for sale. Though the centaury is so much esteemed, and so universally purchased, it is vended in large bunches at six cents each, owing to the abundance.

#### MEDICAL PROPERTIES.

Centaury, like nearly all of the very natural family of Gentianæ, to which the genus belongs, is an intense bitter, every part of the plant equally partaking of this quality.

It is justly held in estimation as a valuable tonic bitter ; and for this property it has received a place in this work. It seems to differ from the *Chironia centaurium*, or Lesser-Centaury of Europe, in the circumstance of the flowers, as well as the other parts of the plant, being intensely bitter. In every other respect it is very similar, and equally deserving of extensive use. It has been very generally administered in febrile diseases throughout the United States, by regular practitioners ; it is also much used in domestic practice, as a prophylactic against autumnal fevers. The late Dr. Barton says it “ was much employed in the year 1793, in certain stages of yellow fever ;” and the doctor was of opinion that it was often used with much benefit.\*

On the whole, Centaury may be confidently recommended, for its pure bitter, tonic and stomachic virtues. It ought to have a place in all the apothecaries' shops of our country. It readily yields its active virtues to aqueous and spiritous menstrea. But the infusion, taken cold, is the most common method of using the medicine. It may also be given in powder, but not, I think, so advantageously. Perhaps an extract would be an useful preparation ; in some diseases this mode of using the plant might have a just preference to the infusion. I have often prescribed the infusion and spiritous tincture, and have taken both myself. From

\* Collections for a *Materia Medica* of the United States.



experience, therefore, I can state, that the plant affords a grateful and efficacious tonic bitter, quite equal to the European plant, and much more readily procured. Indeed it is doubtful whether the Lesser-Centaury can be procured any where in our shops, in sufficient abundance to be extensively used ; whereas the plant under notice is within the reach of every one.

TABLE XXIV.

Fig. 1. Represents the upper portion of *Sabbatia angularis*, of the size of nature.

2. Front view of a separated flower.

3. The calix and pistil.

4. Back view of a separated flower, shewing the calix and under side of the corolla.

5. A stamen.

6. The pistil.

The flowers are not unfrequently of the size of the smallest ones represented in this drawing; but in specimens taken from favourable situations they are as large as figured.



## APPENDIX.

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### CHEMICAL ANALYSIS OF EUPHORBIA IPECACUANHA.\*

FOUR drachms of powdered Euphorbia were digested in four ounces of Alcohol, specific gravity 827, for the space of ninety-six hours, half of which time it was exposed to a heat between ninety and a hundred degrees of Farenheit's thermometer. At the expiration of this time, the alcohol had acquired a pale lemon colour, which disappeared on the addition of a few drops of nitric acid, without producing any other phenomenon than the evolution of a peculiar ethereal odour. On the addition of water, slight flocculi appeared, so minute as to elude chemical examination; they were

\* This analysis was made by Mr. Cullen, chemist, of this city; a gentleman every way qualified for such investigations. It is extracted from the Thesis of Mr. Royal, a graduate in our University.



redissolved on the addition of alcohol. To another portion of this alcoholic solution, tincture of galls was added, with no other effect than changing its colour to a dark brown. A separate portion was tested by a solution of gelatine, which produced no change whatever in its sensible or chemical properties. The non-existence of cinchonin or tannin, being thus ascertained, the remaining tincture was submitted to distillation in an alembic, placed in a water-bath, saturated with muriate of soda. On the application of heat there ascended a small quantity of pure alcohol. On an elevation of temperature, there came over a dark brown fluid, bearing a striking analogy in smell and colour, to highly rectified oil of amber; the residuum, when hot, was of the consistence of tar; but on cooling, assumed a concrete form, extremely brittle, and when broken, of a glassy fracture, not unlike kino.

A small quantity of this extract was subjected to distillation, and afforded carburetted hydrogen and carbonic acid. On another portion of the extract, distilled water was boiled until it formed a brown turbid mixture, which deposited, on cooling, small shining molecules, that resisted the successive action of highly concentrated ether and alcohol; but were converted into oxalic acid on the affusion of nitric acid.

There resides, therefore, in the *Euphorbia Ipecacuanha*, a colouring principle, soluble in alcohol, and insoluble in water;

forming with nitric acid oxalic acid, and a peculiar odorant principle. That it contains resin, may be concluded from water precipitating the alcoholic solution, and alcohol redissolving the precipitate ; and, from the quantity of carburetted hydrogen it evolves when heated, that its emetic matter differs from that found in the *Callicocca Ipecacuanha*, by the French chemists (Messrs. Pelletier and Magendie), may be inferred by its not forming a precipitate with the gallic acid, which the other does abundantly, nor is its emetic principle as soluble in acetic acid, as that of the *Callicocca ipecacuanha*.

To ascertain further its constituent principles, the following experiments were instituted: Four ounces of *Euphorbia*, finely powdered, were infused in six ounces of distilled vinegar, specific gravity 1300.5, water taken at 1000 ; in 72 hours the vinegar had acquired an increase of fifteen grains in specific gravity, and a light straw colour, which remained permanent notwithstanding nitric acid had been poured on it. To be certain that no mistake had been committed in weighing the vinegar, the residuum, insoluble in acetous acid, was carefully dried ; when its loss was found to be in exact ratio to the increased specific gravity of the solution.

All the experiments performed on the alcoholic solution were repeated, and attended with similar results, except that a quantity of mucilage was precipitated by the super acetate of lead.

In another experiment six drachms of Euphorbia coarsely powdered were infused in eight ounces of distilled water for the space of two days, and afterwards boiled for four hours ; the decoction was mucilaginous, and of a light brown colour, possessing an odour resembling oat-meal. It afforded similar products with the preceding ; and was not precipitated or altered in appearance by a solution of tartar emetic, nitrate of potash, or a watry solution of opium.

Iodine produced a copious blue precipitate ; thereby indicating the presence of starch, which precipitate was collected on the filter, in the form of Ioduret of starch.

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*The synonyms are in Italics.*

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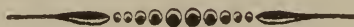
**VEGETABLE MATERIA MEDICA**

OF THE

**UNITED STATES:**

OR,

**MEDICAL BOTANY.**







# VEGETABLE MATERIA MEDICA

OF THE

UNITED STATES;

OR

## MEDICAL BOTANY:

CONTAINING

A BOTANICAL, GENERAL, AND MEDICAL HISTORY, OF MEDICINAL  
PLANTS INDIGENOUS TO THE UNITED STATES.

ILLUSTRATED BY

COLOURED ENGRAVINGS,

MADE AFTER ORIGINAL DRAWINGS FROM NATURE, DONE BY THE AUTHOR.

---

BY WILLIAM P. C. BARTON, M. D.

SURGEON IN THE UNITED STATES' NAVY, AND OF THE NAVAL HOSPITAL AT PHILADELPHIA:

AND

PROFESSOR OF BOTANY IN THE UNIVERSITY OF PENNSYLVANIA

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VOLUME II.

---

PHILADELPHIA:

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JOSEPH R. A. SKERRETT, PRINTER.

.....  
1818.

EASTERN DISTRICT OF PENNSYLVANIA, TO WIT:

\*\*\*\*\*  
\* BE IT REMEMBERED, That on the third day of December, in the forty-third year of the  
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\* said District, hath deposited in this office the title of a Book, the right whereof he claims as Au-  
\* L. S. \* thor, in the words following, to wit: "Vegetable Materia Medica of the United States; or Medical  
\* Botany: containing a Botanical, General, and Medical History of Medicinal Plants, indigenous to  
\* the United States. Illustrated by coloured Engravings, made after original drawings from nature,  
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\* and proprietors of such copies, during the times therein mentioned."—And also to the act, enti-  
\* tled, "An act supplementary to an act, entitled, "An act for the encouragement of learning, by  
\* securing the copies of maps, charts, and books, to the authors and proprietors of such copies  
\* during the times therein mentioned," and extending the benefits thereof to the arts of designing,  
\* engraving, and etching historical and other prints."

D. CALDWELL, Clerk of the Eastern District of Pennsylvania:

TO

**SAMUEL EWING, ESQ.**

AN ACCOMPLISHED SCHOLAR,

AND

AN EMINENT MEMBER OF THE PHILADELPHIA BAR:

THIS VOLUME,

IN EVIDENCE OF ESTEEM,

AND IN GRATITUDE FOR HIS LONG-TRIED FRIENDSHIP,

IS INSCRIBED

BY THE AUTHOR.





## PRELIMINARY OBSERVATIONS.

IN presenting the second volume of this work to the public, it may be proper to offer a few remarks, relative to the nature of the enterprise, and the progress which has been made towards achieving it. As soon as my attention was directed to the Botany of our country, it appeared to me obvious, that a rich treasure of Medicinal vegetables, remained imperfectly described and unknown. Considering, indeed, the vast extent of territory, and the luxuriance and number of the vegetables of the United States, its botany has been investigated with a surprising degree of zeal and research. But, unfortunately, only its nomenclatural botany, has hitherto excited much attention. I did believe, when I conceived the design of illustrating the medical botany of our country, that such a work, even though it were limited to the delineation and description of the known medicinal plants, or those supposed to be medicinal, would have the effect of directing a more general attention to this important subject, than had previously been bestowed, and of giving an impulse perhaps, to the studies and observations of those physicians and botanists whose qualifications and opportunities were equally propitious to investigations of this nature. And it must be confessed, I have had my anticipation, on this point, fully realized. To this work, and that of my fellow traveller in the same path, may perhaps be attributed, some

of the eager curiosity and attention which our native medicinal plants now manifestly excite. Thus much may, it is hoped, with propriety be said. And if this work only perform the office of the finger-post on the road, which, though it stirs not one inch of the way itself, points out the right path to be pursued, it will not have been published in vain. Already the attention to this subject may be seen, in a late valuable edition of the Edinburgh Dispensatory, by Dr. Dyckman, of New York, in which more of our native medicines will be found, than have, heretofore, appeared in the American Dispensatories. And it is not doubted, that when the national Pharmacopœia, now meditated, is given to the world, the *Materia Medica* of the United States will not only be extensively used by our own physicians, but will be eagerly sought for by those of foreign countries. But, our *Materia Medica* is not the only worthy object of enquiry, to the botanist: the *Materia Alimentaria* of North America, is equally interesting. From an unfortunate race of human beings now rapidly disappearing, by the influence of the combined effects of warfare, civilization, and amalgamation with the whites, much valuable information might, in all probability be obtained, on the subject of their *materia alimentaria*.\* For among the esculent vegetables of the Indians

\* It is highly probable that among the manuscripts which were left by the late Professor Barton, much interesting information on this subject might be collected. His well known inquisitiveness, and his constant habit of recording, in however desultory a manner, the facts with which his enquiries made him acquainted, warrant the belief, that the public are deprived of some curious and very interesting knowledge, in conse-

of our country, it has always been supposed there were some worthy of cultivation for the table. This has heretofore been prevented, in consequence of our ignorance of the identical plants, or precise species, which were used by the savages. The travels of Lewis and Clarke, have put us in possession of the Indian names of many native dietetic articles, and these names have occasionally been accompanied by imperfect descriptions. Not much more therefore than conjectures, could be expected to arise from such informal and unscientific accounts ; and indeed, little else has resulted, on this subject, from the rich op-

quence of the cloak which has been thrown over his collections. Strange as it may appear, it is not the less true, that not a single one of these manuscripts, not even his lectures on *Materia Medica*,\* has ever seen the light. The public is yet to be informed what has become of the industrious collections of that eminent man ; and it is sincerely hoped they have not been recklessly destroyed. Though the author of this work, his own nephew, was engaged in the same pursuits which occupied much of the time and attention of the late Professor, not a single line of his manuscripts has ever been put into his hands, or seen by him ; nor was his opinion even asked about the disposition of them. But on the contrary, he was refused a sight of such memorandums and notes as were asked to enable him to write an authentic account of his life, when called on so to do by the Philadelphia Medical Society, of which the Professor, at the time of his decease, was president. It has been deemed proper to make this public avowal, because it has been mentioned to the author, that some persons supposed him possessed of all the papers and collections of the late Professor Barton, designing by such intimation, to deprive the author of whatever credit his persevering exertions, in despite of discouraging and opposing obstacles, may have deserved.

\* The manuscript lectures on *Materia Medica*, were sold to Mr. Dobson, more than two years since, *but have not yet been published.*



portunities of that governmental expedition. It is well known, that no botanist or naturalist accompanied those travellers; although our ornithology might have been enriched by some new species of birds, or some interesting facts relative to the habits and migrations of known species, had the humble and entreating offer of the lamented Wilson,\* to accompany the expedition, been accepted. It is neither my intention, nor my province, in this place, to make any animadversions on the direction of that great undertaking: but I cannot forbear to remark, that from the discoveries made by a botanical examination of the few plants brought by captain Lewis, we are warranted in the belief, that a very splendid harvest might have been reaped, had any competent botanist accompanied the party. I need only mention, in proof of this, the discovery of the plant which yields the *bread-root* of the Indians.

The *Opopanok*, the *Mockshaww*, the *wild-potatoe*, and the *hog-potatoe*,† are yet entirely unknown; at least the identical plants bearing these names, are not yet ascertained. They are, undoubtedly, native vegetables; and it was formerly supposed that some one or two of them,

\* For an affecting account of the transaction here alluded to, I beg leave to refer to the masterly biographical sketch of his friend, by John Ord, Esq. prefixed to the tenth volume of Wilson's Ornithology, which was edited by this zealous naturalist.

† I am aware that the *convolvulus panduratus* has been called *hog-potatoe*, but whether it is really the plant so commonly recognised by that name formerly, is somewhat problematical.

were aboriginal names for the common Irish-potatoe, (*solanum tuberosum*.) The enquiries and investigations, however, of the late Professor Barton, in relation to this subject,\* while they prove, beyond the possibility of doubt, that the Irish-potatoe, as it is generally now called, is not a native of any part of North-America, sufficiently satisfy us, that neither of the vegetables under the above names, can be identical with that plant.

The travels of Baron Humboldt, which have so much enriched our knowledge, by details of the practical and æconomical uses of plants, acquaint us, that the inhabitants of Palma and Gomera make a composition out of the root of *Pteris aquilina* and barley-meal, which serves them for food.† This fern is plentifully distributed along the moist edges of woods, fields and bogs, all over the United States. It grows near the falls of Schuylkill, and indeed all along its western shores, and in Jersey, near the Delaware river. The Lenni-Lenappes, we well know, used two important dietetic articles, the Mockshauw, and a subterranean aquatic tuber, which has by some been conjectured to be the *Sagittaria sagittifolia*.‡ This, however,

\* Tilloch's Philosophical Magazine.

† They grind the roots to powder, then mix it with the meal, and boil it. When thus prepared, it is termed *gofio*.

‡ While I have mentioned this plant, I may not inappropriately state, that the root seems to have been successfully used as a poultice, in cases of sphacelating ulcers.

certainly is not the case; but the *Pteris aquilina* may be the plant meant under the name of *Mockshauw*. I throw this out as a mere suggestion; at the same time I ought to remark, that in perusing the "*Materia Venenaria regni Vegetabilis*," of Puihn, I met with an observation relative to *Orontium aquaticum*, (which also inhabits the borders of rivers, and such places as the Delaware Indians were said to have resorted to for their favourite *Mockshauw*,) which induced me to think it not improbable, that this is the plant intended by that name. The observation is as follows: "*Orontii aquatici radix, quæ cineribus tosta Americanis sylvestribus cibo est, cruda ob acredinem hominibus toxifera habetur. Semina quoque, quæ bene siccata et cum aqua aliquoties cocta ferculum exhibent, cruda acerrima sunt.*"\*

"The Indians had their sallads," we are told by the late Professor Barton, who remarks at the same time that the "*Indian sallad*," and the "*Shawnee sallad*," of the states of Kentucky and Ohio, are praised by the white settlers; and adds, "they are unknown to me."† It

An officer of the war department pointed out this plant to me in a marsh in the city of Washington, and informed me, that an officer in the army, with whom he was acquainted, had caused the plant to be dug up, the roots bruised, moistened, and applied to a very extensive and ill-conditioned ulcer, in which mortification had commenced, and that one or two applications of the poultice checked the progress of the mortification, and the sore healed kindly and rapidly.

\* *Materia Venenaria*, p. 80.

† Collections for a *Materia Medica*, and Discourses on some of the principal desiderata of Natural History, read before the Philadelphia Linnæan Society.



would perhaps be going too far to say, at this period of my information on the subject, that I had ascertained the plant to which these names refer; though I am certainly warranted in saying, that the facts I am possessed of render it extremely probable, that the *Shawnee* or *Indian sallad* of the state of Kentucky, is the *Hydrophyllum appendiculatum*.\*

But these are merely a few instances of the desiderata on this point. From an investigation of so rich a subject, much novel and interesting information must necessarily be acquired.

\* Some time since, Dr. Short, of Hopkinsville, Kentucky, sent a specimen of a plant to a friend in this city, with the following note: "I send you a plant, vulgarly known in Ohio, Kentucky, and Tennessee, by the name of *Woollen-breeches*. The young shoots are eaten in the spring, as a sallad, and highly praised by all who eat them. I could wish to know the name of this plant, which I understand Mr. Correa was very anxious to see, when in this part of the world." The plant in question proves on examination, to be *Hydrophyllum appendiculatum*. I subsequently received a better specimen from Dr. Eberle, of Lancaster, who obtained it, I believe, from the late Dr. Muhlenberg, or who found it in one of the books purchased from the reverend doctor's library. From this specimen, aided in the colour of the flowers, by a sketch sent on the blank page of the letter, by Dr. Short, I have made a drawing. I have already said, I do not assert that this plant yields the *Shawnee sallad*, or *Indian sallad* so called; but as it certainly is an *Indian sallad*, and inhabits the districts of country in which the *Shawnee sallad* is said to grow, it is by no means unlikely that it may be the plant intended by those appellations; and from what has been said concerning it, is undoubtedly worthy of cultivation. The roots of a species of the same genus, *Hydrophyllum Canadensis*, we learn, were eaten by the Indians in times of scarcity.



Impressed with these views, I had determined, after embracing the whole of the medicinal plants of these states, to continue the work by delineating all the dietetic native vegetables of our country, and giving of each a correct coloured plate. Whether this part of my design will ever be accomplished, it is difficult to say. There are many discouraging circumstances connected with investigations of this nature, which I may not feel willing to combat or oppose. Among them, is the notorious discouraging influence, at least in this city, relative to botanical pursuits, proceeding too from sources where accidental and professional elevation gives a kind of adventitious importance to opinions, which would otherwise be wholly inefficient in their operation, if not beneath notice or refutation. As regards my own efforts, I am free to confess, that my interests are too deeply connected with such opposition to the pursuits of the professorship I have the honour to hold, to be very solicitous to run counter to, or struggle against, such appalling circumstances. And at least necessity, if not the will, would urge a relinquishment of pursuits, which are industriously taught to be incompatible with the severe, and more useful occupations of medicine, or with the attainment of the more conspicuous eminence to which the practice of physic and surgery lead.

It may now be proper to inform the public of the state of forwardness of this work. The whole number of plates necessary to complete it, are engraved; and were it not for the tediousness of the colour-

ing,\* the second volume might be presented complete, in a month from this time. By the first of the ensuing March, however, the eighth and last number will be published. And though all the important medicinal plants of our country, cannot be comprehended within the limits to which it was thought prudent, on the subscribers' account, to affix to the present undertaking, still, it is hoped, a sufficient number have been figured and described, to render the work useful. If the public desire a continuance of it, their encouragement may effect it. To them already the publishers are indebted for a very extensive patronage, and the author for a very flattering reception of his labours. The former were richly entitled to it by their enterprise, in undertaking so costly a publication, and their great

\* It may be proper to mention in this place, that when this work was commenced, the author believed, being under the impression that the subscription would be very limited, that he would be enabled to execute all the colouring with his own hand. The large subscription which was immediately filled up, soon convinced him, that this was utterly impracticable; and he consequently was obliged to have recourse to the assistance of others. And even with the assistance, sometimes of six persons, he could not supply the coloured copies as rapidly as the publishers orders called for. He has been fortunate in meeting in his own family, with some persons, whose colouring is faithful—but in many instances he has met with repeated disappointment and mortification, in those who wanted this faithfulness—and in despite of all exertions to prevent it, some colouring has passed through his hands, which, though not very faulty, was far from being as well executed as could be desired. With a view to complete the work as soon as possible, a few plates have been done by Mr. Boyd, and Mr. Warnicke; the largest number, however, have been executed by Messrs. Tanner, Vallance, Kearny, and Co. The plates are highly creditable to the talents of all these excellent artists.

liberality in conducting it; and the author can say with sincerity, that he has spared no effort in endeavouring to render his work useful, and worthy of the distinguished countenance with which it has been honoured.

*Philadelphia, December 3d, 1818.*





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CHAPTER I

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CHAPTER II

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PODOPHYLLUM PELTATUM.  
(May Apple.)





## PODOPHYLLUM PELTATUM.

### MAY-APPLE.

Mandrake. Wild Lemon. Ipecacuanha. Duck's-foot, (in England.)

*Germ.* Schildblättriger Entenfuss. (Willd.) Entenfuss; Fluss blatt.

*Dutch.* Eendenpoot.

*PODOPHYLLUM peltatum.* L. Sp. Pl. 723. a. Murr. 489. Hort. Kew. ii. 222. Boerh. ii. 72. Catesb. Car. 1. t. 24. Schoepf. 86. Bart. Collections, 31. 37. 40. ed. 3d. 31. 39. Coxe's Disp. ed. 3d. p. 499. Thatcher's Disp. ed. 3d. p. 318. Dale 421. col. 1. par. 1. Stokes's Bot. Mat. Med. iii. p. 179. Bigelow, Florula Bost. p. 132. Pursh. Fl. Am. ii. 366. Juss. 235. Mich. Fl. Am. i. 309. Hort. Cliff. 202. Hort. Ups. 137. Gron. Virg. 5. Roy. Lugdb. 480. Trew. ehret. t. 29. Mill. Dict. Houttuyn. Lin. Pl. Syst. 7. p. 187. Willd. Sp. Pl. tom. ii. par. iii. p. 1141. Dyckman's edition of the Edinburg Dispen. p. 347. Barton's Cullen, vol. i. p. 91. vol. ii. p. 375. Nutt. Gen. Am. Pl. vol. ii. p. 10. Bart. Prod. Fl. Ph. 57. Bart. Compendium Floræ Philadelphicæ, vol. ii. p. 9. Mentz. Pugill. t. 11. Ait. Hort. Kew. vol. iii. 287. Lamarck, Illustr. t. 449. Muhl. Cat. 53. Pharm. Med. Soc. Mass. 26.

### PODOPHYLLUM.

Gen. Pl. ed. Schreb. n. 879.

*Cor.* 9-petala, (6-10 petala. B.) *Cal.* 3-phyllus. *Bacca* 1-locularis, coronata stigmatē.



*Podophyllum peltatum.*

*Calix* 3-leaved. *Petals* 9. *Stigma* crenate, sessile. *Capsule* superior, 1-celled, many-seeded, becoming an ovate berry. *Receptacle* unilateral, large and pulpy.—*Nutt.*

Nat. Syst. Juss. *Ranunculaceæ*. Classis XIII. Ordo I.

PODOPHYLLUM, L.\* *Anapodophyllum*, T.\* *Calix* 3-phyllus. *Petala* 9. *Stylus* 0; *stigma* capitatum. *Caulis* 2-phyllus *foliis* palmatis, *in dichotomiâ* 1-florus *flore albo*.

Juss. Gen. Plant. ed. 1789. p. 235.

Nat. Ord. Lin. *Rhœadææ*.

Classis *Polyandria*. Ordo *Monogynia*. Lin. Syst.

Gen. Ch. *Cal.* Perianth inferior, of three large, coloured, ovate, concave, ascending leaves, soon falling. *Cor.* Petals nine, orbicular, concave, plaited at the margin. *Stam.* Filaments numerous, very short; anthers oblong, large, erect. *Pist.* Germen superior, roundish; style none; stigma obtuse, furrowed. *Peric.* Berry globose, crowned with the permanent stigma, of one cell. *Seeds* numerous, roundish. *Receptacle* central, unconnected.

Ess. Ch. Corolla of nine petals. Calix of three leaves, deciduous. Berry of one cell, crowned with the stigma. Ency.

PODOPHYLLUM *peltatum*; stem one-flowered; leaves peltate, palmate, lobate; lobes cuneate, incised. Barton's Compendium Floræ Philadelphicæ, vol. ii. p. 9.

## SYNONYMA.

ANAPODOPHYLLUM *Canadense*. Catesb.

ACONITIFOLIA *humilis*, *flore albo unico campanulato fructu cynosbati*. Mentz.

## PHARM.

PODOPHYLLI *peltati*, *Radix*; interdum *fructus*.

THE generic name *Podophyllum*, is derived from  $\pi\upsilon\delta$ , a foot, and  $\phi\upsilon\lambda\lambda\omicron\varsigma$ , a leaf, from a fancied resemblance of the leaf to the web-foot of aquatic birds. It was called originally by Tournefort *Anapodophyllum*, from *anas*, the Latin name for a duck; but Linnæus's more correct notions of derivation, caused him to modify this exceptionable word in the manner it is now universally received. The species which is the subject of this article, is a hardy perennial herbaceous plant, and is perhaps, one of the most important medicinal vegetables indigenous to our country. The root is creeping, very long, often from three to six feet in length, of a burnt-umber or bistre colour externally, and yellowish-white within. It is smooth and round, but interrupted by joints or nodes, from which proceed numerous large fibres of a colour considerably lighter than the main root. The stem is upright, simple, round, smooth, yellowish-green, about a foot or fourteen inches high, supporting two large leaves, and a single flower in the fork, formed by the junction of the petioles. The leaves when they first appear are often marked with brown discolorations; these occasionally continue on them when mature. They are peltate, the petioles inclining mostly towards the edge of the fissure in the base. They are palmately divided for the most part into six large lobes, attenuated towards the bottom, and irregularly incised at the top, with sometimes sharp and often obtuse points. They are strongly veined, are of a fine yellow-green above, pale underneath, inclining in the mature leaves to a grey or bluish-green, and are reputed to possess a deleterious quality. The flower is drooping, mostly of the size represented in the plate,

consisting of three deciduous calix leaves (Fig. 8.) and from six to nine white petals, delicately reticulated with veins, and forming a concave flower. The pistil is somewhat urceolate, of a yellowish colour and crowned with a crenate stigma, much darker. The stamens are from thirteen to twenty, and of a yellow colour. The fruit varies much in size, according to the different situations in which the plant may have grown. Its usual size is that represented in the figure, or of a common plumb, but I have very frequently seen it twice as large, and it is often smaller. It is, when mature, of a lemon-yellow colour, slightly maculated with round brownish dots, and is crowned with the persistent stigma. It consists internally of a delicate pulp, in which about a dozen seeds are immersed, attached by umbilicate fibres to the receptacle, which is situated more to one side than the other. This fruit is extremely delicious to most persons, and to many quite apperient; it may be eaten in considerable quantities without any unpleasant effect, and being subacid and grateful, may be considered healthful. Schoepf says, the pigeons of Carolina are fattened by eating it. The seeds are about twelve in number, of the size and shape represented in the drawing, and of a light yellowish colour.

This plant is propagated so luxuriantly by the creeping of its roots, that but a small proportion of the flowers produce fruit; perhaps not more than one in forty or fifty; so that it is not uncommon to find whole patches consisting of two or three hundred

plants, with scarcely more than a couple of dozen fruiting specimens.

The May-apple is exclusively a native of North America ; and is found from the northern to the southern boundaries of the United States, in great profusion, generally inhabiting moist, rich, and shady woods, though not unfrequently met with in open or exposed situations, as well as often by the edges of rivulets. It appears, however, to delight in moist soil, being always most luxuriant in humid places. When it grows in low and very wet or marshy grounds, the roots become larger than usual, and quite succulent, so that in exsiccation they lose more than half their diameter.

Why this plant has received the name of May-apple, it is difficult to conjecture, since it only commences flowering, at least in the middle and northern states, in the latter part of the month of May, and is not in full bloom until the first week in June. Its fruit is not mature till the latter part of September, at which time the leaves have become faded to a yellow colour, or have entirely fallen off. Then is the proper period for collecting the roots for medicinal uses ; they should be dried and pulverized for use. The Indians dry them in the shade. (For Chemical Analysis, see Appendix.)



## MEDICINAL PROPERTIES.

The root of the May-apple, exclusively, is used in medicine. There is no indigenous plant whose medicinal virtues are better ascertained at present. Its proper place in the *Materia Medica*, is among cathartics ; and it may be ranked among the most safe and active of this class of medicines. Schoepf briefly remarks that the root is emetic, without specifying the dose which produces that effect ; and Puilhn speaks of it as a powerful emetic: "*Podophylli peltati radix valde emetica est.*"\* Like most active purgatives, this medicine will occasionally act upon the stomach ; and I have on two occasions found large doses, to produce full vomiting. But this is certainly not the usual, or conspicuous effect of the powder ; on the contrary, it almost always acts as an active purgative. In an extensive use of this article for two years past, I have, with the exception of the two instances just mentioned, uniformly found it to affect the bowels ; and I have repeatedly employed it alone ; though the better mode of administering it is in conjunction with the supertartrate of potash, calomel or rhubarb. The root has "often been found to operate as an anthelmintic, and it is used as such by the Cherokee

\* *Materia Venenaria Regni vegetabilis.*

and other southern Indians.”\* Of this my experience affords neither corroboration nor refutation; but in all probability the plant is destitute of any specific anthelmintic virtue; and most likely expels worms as calomel and many active purgatives do. The late Dr. Barton tells us that he had heard much of the virtue of an extract of the root of May-apple, but had never himself used it. It is reputed to have been found highly useful as a cathartic in colica pictonum.† He seemed to think that, as a cathartic, the powder possessed some advantages over rhubarb and jalap; he does not however mention in what respect he deemed it superior or preferable. My impression, from an impartial administration of the powder, in repeated trials, is, that it is equal to the common jalap of the shops, in doses of the proportion of a scruple of the former, to fifteen or eighteen grains of the latter; and in this it seems indeed to be preferable to the jalap, that it is less nauseous to irritable stomachs. Dr. Barton remarks, “that *Podophyllum* has been thought by some practitioners, to be especially adapted, as a purge, to cases of intermittents, remittents and dropsy;” and concludes by observing, that he “believes the medicine possesses some narcotic quality.”‡

\* Barton's Collections.

† Barton's edition of Cullen's *Materia Medica*, vol. 2. p. 375.

‡ Ibid.

## TABLE XXV.

- Fig. 1. Represents the *Podophyllum peltatum* in flower, the stem broken from Fig. 2. at the mark.+
2. The lower portion of the stem and root of the same.
  3. The mature fruit of the commonest size.
  4. A cross section of the same, shewing the pulp and the attachment of the seeds to the receptacle.
  5. A longitudinal section of another fruit, which shews the variation in the shape of the apple, and gives a different view of the seeds.
  6. A back view of a seed.
  7. A front view of the same.
  8. A view of the unexpanded flower, exhibiting the calix before it has fallen.
  9. A stamen.





Fig. 1



Drawn from Nature by W. P. Barton.

Bot. Soc. Am.

HYDRASTIS CANADENSIS

Golden Root

## HYDRASTIS CANADENSIS.

### YELLOW-ROOT.

*Germ.* Canadische Hydrastis. (Willd.)

*French.* Hydraste de Canada.

**HYDRASTIS** Canadensis. L. Sp. Pl. 784. Mant. 408. Hort. Kew. ii. 273. Mill. Ph. ic. 190. t. 285. Stokes's Bot. Mat. Med. iii. 278. Houttuyn. Lin. Pfl. Syst. vii. p. 379. Mich. Fl. Am. Boreal. i. 317. Pursh. Fl. Am. ii. 389. Muhl. Cat. 57. Willd. Sp. Pl. ii. p. 1340. Coxe's Disp. ed. 3d. 374. Dyckman's Ed. Disp. 416. Barton's Collections, ed. 3d. par. i. p. 9. par. ii. p. 13. Bart. Comp. Fl. Ph. ii. p. 22. Bart. Prod. Fl. Ph. p. 61. Juss. 232. Lamarck, Dict. v. 3. 151. Illustr. t. 500. Lin. Gen. Pl. 283. Schreb. 379. Mart. Mill. Dict. v. 2. Bart. Elem. Bot. par. 3. p. 70.

### HYDRASTIS.

Gen. Pl. ed. Schreb. n. 958.

**HYDRASTIS.** Cal. 0. Petala 3. Nectaria 0. Bacca composita acinis monospermis.

Nat. Syst. Juss. Ranunculaceæ. Classis XIII. Ordo I.

*Hydrastis Canadensis.*

HYDRASTIS, L. \* Calix 0. Petala 3. Baccæ numerosæ minimæ. Caulis alternè 2-phyl-  
lus, foliis palmatis; flos solitarius terminalis; fructus et habitus Rubi herbacei.  
Affinis Podophyllo, sed polygyna. An semini perispermum corneum?

Juss. Gen. Plant. ed. 1789. p. 232.

Nat. Ord. Lin. *Multisiliquæ*?

Classis *Polyandria*. Ordo *Polygynia*. Lin. Syst.

Gen. Ch. *Cal.* Perianth none. *Cor.* Petals three, ovate, regular. *Stam.* Filaments nu-  
merous, linear, compressed, a little shorter than the corolla; anthers com-  
pressed, obtuse. *Pist.* Germens numerous, ovate, forming themselves into an  
ovate head; styles very short; stigmas broadish, compressed. *Peric.* Berry  
composed of oblong grains. *Seeds* solitary, oblong.

Ess. Ch. Calix none. Petals three. Nectary none. Berry composed of single-seeded  
grains. Ency.

HYDRASTIS Canadensis; caule supernè oppositè diphylo; foliis petiolatis basi emargi-  
natis, palmatis, serratis, incisis; pedunculo terminali solitario unifloro.—  
Willd. and Pursh.

Stem above oppositely two-leaved; leaves petiolate, emarginate at the base, pal-  
mate, serrate, incised; peduncle terminal, solitary, one-flowered. B.

## SYNONYMA.

WARNERA Canadensis. Mill.

HYDROPHYLLUM verum Canadensium. Sp. Pl. 1. p. 146.

## PHARM.

HYDRASTIS Canadensis, *Radix*.

AMONG the numerous distinguished contributors to the herbarium  
of Linnæus, was the industrious Mr. John Ellis; and to him we are

indebted for the generic name *Hydrastis*, and the first description of the only species of the genus yet discovered.\* Linnæus seems, through some misapprehension in the history or discovery of this plant, or some confusion relative to the communication of it by Mr. Ellis, to have supposed that his friend designed to commemorate “a young lady of noble birth;” other botanists have thought it probable,† that the name had a reference to the natural situation of the plant, from ὑδωρ, water, or ὑδρεϊα, an *imbibing of water*. It is extremely doubtful whether this was really the derivation of the word; for the plant, as far as any thing of its natural history is known to me, is neither remarkable for imbibing, nor for growing in the vicinity of water; neither does it appear to delight in a very moist soil, for in the vicinity of Lancaster, where I have met with the greatest abundance of it, and where it grows in profusion, it is confined altogether to shady woods of rich soil. It was first cultivated in England by P. Miller, in 1759, and is erroneously there called, a *bog-plant*.

The root consists of a tortuous or gibbous caudex, from which proceed a great number of tolerably large fibrous portions; all of a bright yellow colour, but the fibres rather more brilliant than the

\* I am aware that Walter has described a species by the name of *H. Carolinensis*, but it is probably nothing more than a local variety of this one. Dr. Muhlenberg has introduced it in his catalogue with the doubtful mark.

† Edit. Article *Hydrastis*. Rees's Ency.



main root. It shrinks considerably in drying, often losing two-thirds of its bulk. The stem is upright, from eight to twelve inches high, round and finely pubescent or hairy, especially in the young state of the plant. It is terminated by two leaves of unequal size, beyond the smaller of which the peduncle projects to the length of three quarters of an inch, and is terminated by a single three-petalled, white or very pale rose-coloured flower.

The leaves are petiolated, emarginate at the base, palmate, unequally serrated, three, four, or five lobed, the lobes having a smaller lobe on each side. The leaves are at first small during the florescence, but afterwards become much larger, as represented in the outline (Fig. 2.) When the plant is quite advanced, they are often even larger than that figure. The fruit is said to be about the size of a raspberry, and of a bright red colour. It is a compound berry, consisting of a number of muricated acini, the points occasioned by the persistent styles. This plant is in flower in the beginning of May, but as the petals are fugacious, it is seldom seen in full florescence. I have not myself seen it except just after the petals had fallen; in consequence of which I have been obliged to make the drawing of the petals, from a specimen in the Muhlenbergian Herbarium. *Hydrastis* is not a very common plant, except westward of the Alleghany mountains, where it is said to grow in profusion. It is however sufficiently abundant in the woods near Lancaster, in Pennsylvania. In the neighbourhood of this city, it is very rare. I

have two or three times found it on the Wissahickon creek, near Germantown. The young plants which appear in midsummer have but a single leaf. (For the Chemical Analysis, see Appendix.)

#### MEDICINAL PROPERTIES.

The medicinal virtues of *Hydrastis*, reside in the root. When dried, it has a strong and somewhat narcotic smell, and it is exceedingly bitter. Hence spirituous infusions of it are used, and recommended by country practitioners, for their tonic effect. It is a common practice in some parts of our country, particularly in Kentucky, in the vicinity of the falls of Ohio, to use a cold, strained infusion, in inflammation of the eyes. This fact was known to the late Professor Barton who has mentioned it in his "Collections;" and on his authority it has been introduced into our Dispensatories. This plant has been described to me by a gentleman of my class from Kentucky, as being much used in the manner just mentioned. The commendations which have been bestowed on yellow-root, have, unfortunately, not been confined, as perhaps they should have been, to the bitter-tonic virtues which it indubitably possesses; but a mere supposition, rather inadvertently thrown out by the late Professor Barton, that "the Cherokee Indians employ a plant in the cure of cancer, which is thought to be *Hydrastis*," has caused some persons

to attach to its other medicinal qualities, the questionable power of curing or alleviating cancer; and it is much to be regretted that Dr. Dyckman, in his valuable edition of the Edinburg Dispensatory, has mentioned cancer as one of the diseases for which Hydrastis is a remedy. It is, I believe, not to be doubted, that there is scarcely a plant distinguished for any medical powers that is not, in some part or other of our country, commended by the vulgar, as a cancer-remedy. The almost irremediate nature of that disease by any other means than the surgeon's knife, is the obvious cause of such perpetual recurrence to a multitude of remedies, which have, in all probability, no other claim to the name of cancer-remedies, than that which exists in the imaginations of the credulous persons who employ them, and whose temerity in the indiscriminate use of active plants in the treatment of this disease, is unrestrained by that fear, which knowledge inspires, and uncontrolled by a sense of the danger of using acrid or irritating applications. I have made some trials with the pulverised root and spirituous tincture of Hydrastis; and these sufficiently justify me in recommending it to the notice of physicians as a strong tonic bitter. Yet I confess myself unwilling to believe that the plant is possessed of any properties sufficiently active, or of such a nature, as to lead to any reasonable expectation of being serviceable in cancers; though it is probable enough that it is one of the numerous vegetable bases of the many quack medicines for this disorder.



**ECONOMICAL USE.**

The root of *Hydrastis* affords a juice of a brilliant yellow colour, which has been employed for the purpose of dyeing.

**TABLE XXVI.**

- Fig. 1. Represents a flowering specimen of *Hydrastis Canadensis*, about the usual size during florescence.
2. The size of the leaves when the plant is further advanced and in fruit.
3. A petal.
4. A stamen, a very little magnified.
5. Represents the immature fruit about half advanced towards perfection, and about one-third of the size of the full grown berry. I have figured it in this imperfect state, never having seen the mature fruit.







Fig. 1.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 2.



Drawn from nature by D. C. Barton

OROBANCHE VIRGINIANA.

(Cancer-root Beech drops.)

Ill. 100

## OROBANCHE VIRGINIANA.

CANCER-ROOT. BEECH DROPS.

Virginian Broom-rape.

*Germ.* Virginische Sommerwurz. (Willd.)

OROBANCHE Virginiana. L. Sp. Pl. 882. Walt. 167. Gron. Virg. 96. Mor. Hist. ox. s. 12. t. 16. row. 1. f. 9. Stokes's Mat. Med. iii. p. 408. Schoepf. 101. Coxe's Disp. ed. 3d. p. 465. Dyckman's Ed. Disp. 418. Barton's Collections, ed. 3d. par. 2. p. 6. Mich. Fl. Boreali-Am. ii. p. 26. Pursh. Fl. Am. Sep. ii. p. 431. Nutt. Gen. Am. Pl. ii. p. 60. Bart. Prod. Fl. Ph. 66. Bart. Comp. Fl. Ph. ii. p. 50. Muhl. Cat. 61. Walt. Carol. 167. Raj. Supp. 595. Houttuyn. Lin. Pfl. Syst. 8. p. 152. Willd. Sp. Pl. tom. iii. par. 1. p. 350. Lin. Gen. 321. Schreb. 421.

### OROBANCHE.

Gen. Pl. ed. Schreb. n. 1045.

*Cal.* 2-4. s. 5-fidus. *Cor.* ringens. *Caps.* 1-locularis, 2-valvis, polysperma. *Glandula* sub basi germinis.



Nat. Syst. Juss. *Pediculares*. Classis VIII. Ordo II.

OROBANCHE, T. L. \* *Orobanche*. Calix 3-bracteatus, nunc tubulosus 5-fidus inæqualis, nunc subnullus bracteis 2 interioribus latioribus 2-fidis calicem suppleantibus. Corolla tubulosa ventricosa irregularis 2-labiata, suprâ concava emarginata, infrâ reflexa 3-fida inæqualis. Stamina 4 didynama, sub labio superiore. Germen basi glandulosum; stylus 1; stigma 2-lobum. Capsula acuminata 1-locularis 2-valvis polysperma, singulâ valvâ medio 2-placentari et seminiferâ, seminibus minutissimis. Herbæ subcarnosæ rufescentes, parasiticæ plantarum radicibus innascentes; radix tuberosa, squamis imbricata; caulis alternè squamulosus, sæpè simplex; flores bracteati, spicati terminales. Species quædam scapo nudo 1-floro, flore spathaceo affines *Lathræis* 1-floris. Thunbergius *Phelypeæ* nomine describit herbam *Orobanche* similem, unicaulem, aphyllam, squamulosam, dioicam apice florentem, calice 2-partito bracteiformi, corollâ 6-partitâ connivente ciliatâ pilosâ, filamento 1-hypogyno, antherâ clavatâ, germine supero, stylo 1, stigmate capitato, capsula columnari 7-valvi 7-loculari polyspermâ, columnâ intrâ fructum centrali: an planta verè corollata, aut verè 1-andra?

Juss. Gen. Plant. ed. 1789. p. 101-2.

Gen. Ch. Perianth inferior, of two leaves, mostly divided, lateral, sometimes combined at their base, erect, coloured, permanent. *Cor.* of one petal, ringent, withering. Tube bending, ample, inflated. Limb spreading; its upper lip concave, dilated, notched; lower reflexed, three cleft, uneven at the margin, notched; its segments various in size and proportion. Nectary a gland, in front, at the base of the germen. *Stam.* Filaments four, awl-shaped, concealed under the upper lip, two of them longest; anthers erect, approximated, shorter than the corolla, tumid, two-lobed, and acutely awned. *Pist.* Germen superior, oblong; style simple, the length and position of the stamens; stigma drooping, thick, of two obtuse lobes. *Peric.* Capsule ovate-oblong, pointed, of one cell and two valves. *Seeds* numerous, minute. *Receptacles* four, linear, lateral, attached to the valves.

Ess. Ch. Calix of two natural leaves. Corolla ringent. Capsule of one cell and two valves. Seeds numerous. A gland under the germen in front.      Ency.

Nat. Ord. Lin. *Personatae*.

Classis *Didynamia*. Ordo *Angiospermia*. Lin. Syst.

OROBANCHE *Virginiana*; caule ramoso, floribus alternis distantibus, corollis deciduis 4-dentatis. Willd. and Pursh.

Stem branched, flowers alternate, distant; corollas deciduous, 4-toothed.

#### SYNONYMA.

OROBANCHE caule ramoso, floribus distantibus. Gron.

O. minor *Virginiana* lignosior, &c. Morris.

EPIFAGUS *Americanus*. Nutt.

EPIFAGUS *Virginianus*. Bart. Comp. Fl. Ph.

#### PHARM.

OROBANCH. Virg. Radix et Herba.

THE Cancer-root is a very singular, handsome, and interesting parasitic plant. It belongs to a genus which is the *οξοβαρχη* of the Greeks; so named from *οξοβος*, a vetch, and *αρχη*, to *strangle*, or *suffocate*, because the species of the genus designated by this name were supposed to starve, or render barren, the different plants on which they grow. The name of *Broom-rape*, by which all the species of the genus are designated in England, was given in conse-

quence of the *Orobanche* having been originally discovered in that country, to be parasitic on the broom.

The present species is singular in its habit and structure, and interesting, because of the agency there is good reason to suppose it had in the formation of a celebrated cancer-powder. The whole plant is somewhat fleshy; it is herbaceous and wholly without verdure, or even any approximation to that common hue of the vegetable creation. It is frequently altogether of a sickly yellow colour, but most commonly is of a pale pink, with longitudinal stripes of dark purple, white and yellow. These stripes are on the ridges of the stems and branches, all which are finely furrowed. The root is tuberous, yellow, carnose, covered with short convoluted and matted fibres on its lower end, and interspersed with squamose projections towards its junction with the stalk. The stem is glabrous, erect, about twelve or fifteen inches high, much branched from the base, and garnished with scattered, short ovate scales instead of leaves, of which it is entirely destitute. The flowers are numerous, remote, alternate, and situated just above the cauline scales. The calix is a short membranaceous cup, with five vertical acute ribs projecting above, and joined together by their crenate margin. The acute points of those projections are deep purple, inclining to crow-black. The corolla of the fertile or fruiting flowers, is small, being in reality, little else than a four-toothed scale, crowning the large and rapidly enlarging germ, after the manner of the calyptra of



mosses. This corolla, which is represented by the beak-like process in (Fig. 5.) is extremely deciduous, owing to the increase in the size of the germs, which is very rapid, as well as to their oblique form. The later and infertile flowers, which are numerous, and situated towards the tops or extremities of the branches, are about half an inch long, arcuate, tubular, compressed, and bilabiate: the upper lip is somewhat notched, the lower three-toothed; their calices are like those of the primary or fertile flowers, but their corollas are of a cream-white, delicately striped with rose-red, and have, on close inspection, a very beautiful appearance. The pale yellow specimens are generally destitute of these long tubular flowers. The stamens are four in number, rarely exerted, but have no attachment to the corolla; they are furnished with smooth filaments, crowned with small globose pubescent anthers. The style is simple and smooth. The capsule which opens only on one side, contains an immense number of very minute, ovate, yellowish-white seeds, resembling coarse meal.

It has been already said, that this is a parasitic plant, and it is chiefly, if not always found growing on the roots of the Beech, (*Fagus sylvatica*, and *F. feruginea*.) Hence the common name *Beech-drops*, from the vulgar notion, that as the plant is found under the shade of those trees, it is produced by some kind of seed falling from them. The vulgar name *cancer-root*, may have had its origin in the cancerous like structure, if I may so speak, of the root;



or perhaps from the use made of the plant in the treatment of cancers.

Mr. Nuttall says this plant is "equally indigenous to every part of North America." In the neighbourhood of this city, it is very abundant, particularly in the woods above the falls of the Schuylkill, on the west side; where it covers the ground for rods together. It is in full flower in those situations, about the tenth of September, at which time it should be gathered for medical use. (For Chemical Analysis, see Appendix.)

#### MEDICINAL PROPERTIES.

The cancer-root is now introduced into all our dispensatories, and has obtained, whether deservedly or not, I am unable from any experience on the subject to say, not a little reputation as a remedy for cancer. The chief claim it has to any consideration as an efficacious application to cancerous affections, is derived from the circumstance of its having been collected by Dr. Hugh Martin, in the neighbourhood of Pittsburg, Pennsylvania, for the purpose of making his renowned cancer-powder,\* a preparation supposed to consist

\* See Barton's Collections, ed. 3d. par. 2. p. 8.

of the white oxyd of arsenic\* and this vegetable base. On this subject the late Professor Barton has made these observations: "The Oro-

\* Since there is so much reason to believe that the subject of this article was really the vegetable base of this celebrated powder, it may be useful to quote Professor Rush's paper on the subject, at length. I do this the more willingly, because the transactions of the Philosophical Society in which it is published, are not very accessible to most persons.

An account of the late Dr. Hugh Martin's Cancer Powder, with brief observations on cancers. By Benjamin Rush, M. D., &c. &c. "A few years ago a certain Dr. Hugh Martin, a surgeon of one of the Pennsylvania regiments stationed at Fort Pitt, during the latter part of the late war, came to this city, and advertised to cure cancers with a medicine which he said he had discovered in the woods, in the neighbourhood of the garrison. As Dr. Martin had once been a pupil of mine, I took the liberty of waiting upon him, and asked him some questions respecting his discovery. His answers were calculated to make me believe, that his medicine was of a vegetable nature, and that it was originally an Indian remedy. He shewed me some of the medicine, which appeared to be the powder of a well-dried root of some kind. Anxious to see the success of this medicine in cancerous sores, I prevailed upon the doctor to admit me to see him apply it in two or three cases. I observed in some instances, he applied a powder to the parts affected, and in others only touched them with a feather dipped in a liquid which had a white sediment, and which he made me believe was the vegetable root diffused in water. It gave me great pleasure to witness the efficacy of the doctor's applications. In several cancerous ulcers, the cures he performed were complete. Where the cancers were much connected with the lymphatic system, or accompanied with a scrophulous habit of body, his medicine always failed, and in some instances did evident mischief.

banche has been supposed by many persons, to have formed a part of the celebrated cancer-powder of Dr. Hugh Martin, whose success

“Anxious to discover a medicine that promised relief in even a few cases of cancers, and supposing that all the caustic vegetables were nearly alike, I applied the *phytolacca* or poke root, the *stramonium*, the *arum*, and one or two others, to foul ulcers, in hopes of seeing the same effects from them which I had seen from Dr. Martin’s powder; but in these I was disappointed. They gave some pain, but performed no cures. At length I was furnished by a gentleman from Fort Pitt with a powder which I had no doubt, from a variety of circumstances, was of the same kind as that used by Dr. Martin. I applied it to a fungous ulcer, but without producing the degrees of pain, inflammation, or discharge, which I had been accustomed to see from the application of Dr. Martin’s powder. After this, I should have suspected that the powder was not a *simple* root, had not the doctor continued upon all occasions to assure me that it was wholly a vegetable preparation.

“In the beginning of the year 1784 the doctor died, and it was generally believed that his medicine had died with him. A few weeks after his death, I procured from Mr. Thomas Leiper, one of his administrators, a few ounces of the doctor’s powder, partly with a view of applying it to a cancerous sore which then offered, and partly with a view of examining it more minutely than I had been able to do during the doctor’s life. Upon throwing the powder, which was of a brown colour, upon a piece of white paper, I perceived distinctly a number of white particles scattered through it. I suspected at first that they were corrosive sublimate: but the usual tests of that metallic salt soon convinced me that I was mistaken. Recollecting that arsenic was the basis of most of the celebrated cancer-powders that have been used in the world, I had recourse to the tests for detecting it. Upon sprinkling a small quantity of the powder upon some coals of fire, it emitted the garlic smell so perceptibly as to be known by



in the management of many cases of this dreadful disease, has been acknowledged by the regular practitioners of Philadelphia, &c.

several persons whom I called into the room where I made the experiment, and who knew nothing of the object of my enquiries. After this with some difficulty I picked out about three or four grains of the white powder, and bound them between two pieces of copper, which I threw into the fire. After the copper pieces became red hot, I took them out of the fire, and when they had cooled, discovered an evident whiteness imparted to both of them. One of the pieces afterwards looked like dull silver. These two tests have generally been thought sufficient to distinguish the presence of arsenic in any bodies ; but I made use of a third, which has lately been communicated to the world by Mr. Bergman, and which is supposed to be in *all cases* infallible.

“I infused a small quantity of the powder in a solution of a vegetable alkali in water for a few hours, and then poured it upon a solution of blue vitriol in water. The colour of the vitriol was immediately changed to a beautiful green, and afterwards precipitated.

“I shall close this paper with a few remarks upon this powder, and upon the cure of cancers and foul ulcers of all kinds.

“1. The use of caustics in cancers and foul ulcers is very ancient, and universal. But I believe *arsenic* to be the most efficacious of any that has ever been used. It is the basis of Plunkett's, and probably of Guy's well known cancer-powders. The great art of applying it successfully, is to dilute and mix it in such a manner as to mitigate the violence of its action. Dr. Martin's composition was happily calculated for this purpose. It gave less pain than the common or lunar caustic. It excited a moderate inflammation, which separated the morbid from the sound parts, and promoted a plentiful afflux of humours to the sore during its application. It seldom produced an eschar ; hence it insinuated itself into the deepest recesses of the cancers, and frequently sepa-



“As early as 1785, at which time I was a student of medicine, I was informed, by the people inhabiting the western parts of Penn-

rated these fibres in an unbroken state which are generally called the roots of the cancer. Upon this account, I think, in an ulcerated cancer it is to be preferred to the knife. It has no action upon the sound skin. This Dr. Hall proved by confining a small quantity of it upon his arm for many hours. In those cases where Dr. Martin used it to extract cancerous or schirrous tumours that were not ulcerated, I have reason to believe that he always broke the skin with Spanish flies.

“2. The arsenic used by the doctor was the pure white arsenic. I should suppose from the examination I made of the powder with the eye, that the proportion of arsenic to the vegetable powder, could not be more than one-fortieth part of the whole compound. I have reason to think that the doctor employed different vegetable substances at different times. The vegetable matter with which the arsenic was combined in the powder which I used in my experiments, was probably nothing more than the powder of the root and berries of the *solanum lethale*, or deadly nightshade. As the principal, and perhaps the only design of the vegetable addition was to blunt the activity of the arsenic, I should suppose that the same proportion of common wheat flour as the doctor used of his caustic vegetables, would answer nearly the same purpose. In those cases where the doctor applied a feather dipped in a liquid to the sore of his patient, I have no doubt but his phial contained nothing but a weak solution of arsenic in water. This is no new method of applying arsenic to foul ulcers. Dr. Way of Wilmington, has spoken in the highest terms to me of a wash for foulnesses on the skin, as well as old ulcers, prepared by boiling an ounce of white arsenic in two quarts of water to three pints, and applying it once or twice a day.

“3. I mentioned formerly that Dr. Martin was often unsuccessful in the application of his powder. This was occasioned by his using it indiscriminately in *all* cases. In

sylvania and Virginia, that this *Orobanche* formed the principal part, if not the whole, of Martin's powder. It was even said, that Martin,

schirrous and cancerous tumours, the knife should always be preferred to the caustic. In cancerous ulcers attended with a scrophulous or a bad habit of body, such particularly as have their seat in the neck, in the breasts of females, and in the axillary glands, it can only protract the patient's misery. Most of the cancerous sores cured by Dr. Martin were seated on the nose, or cheeks, or upon the surface or extremities of the body. It remains yet to discover a cure for cancers that taint the fluids, or infect the whole lymphatic system. This cure I apprehend must be sought for in diet, or in the long use of some internal medicine.

“To pronounce a disease incurable, is often to render it so. The intermitting fever, if left to itself, would probably prove frequently, and perhaps more speedily fatal than cancers. And as cancerous tumours and sores are often neglected, or treated improperly by injudicious people, from an apprehension that they are incurable, (to which the frequent advice of physicians “to let them alone,” has no doubt contributed) perhaps the introduction of arsenic into regular practice as a remedy for cancers, may invite to a more early application to physicians, and thereby prevent the deplorable cases that have been mentioned, which are often rendered so by delay or unskillful management.

“4. It is not in cancerous sores only that Dr. Martin's powder has been found to do service. In sores of all kinds, and from a variety of causes, where they have been attended with fungous flesh or callous edges, I have used the doctor's powder with advantage.

“I flatter myself that I shall be excused in giving this detail of a *quack* medicine, when the society reflect that it was from the inventions and temerity of quacks, that physicians have derived some of their most active and useful medicines.” Trans. Amer. Phil. Soc. vol. 2. p. 212.

who had passed some time at Fort Pitt, was known to have collected the plant for the purpose. I believe it to be a fact sufficiently established, that the basis, or perhaps rather the most active part, of Martin's powder, was the oxyd of arsenic. This has been shown by a chemical examination of the powder, and by other circumstances nearly as decisive. Thus comatose affections, such as are known to be induced by arsenic, have been induced by the powder of Martin, even when externally applied in cancerous ulcers. A case of this kind came under the notice of a physician in Philadelphia. The patient seemed to fall a victim to the application of the medicine.

“But the powder of Martin did not consist entirely of the oxyd of arsenic. This is certain. I believe it to be certain also, that he combined with the arsenic, a vegetable matter; and from what has been said, it would seem not entirely improbable, that this vegetable was the *Orobanche Virginiana*.

“It may be said, and it is not impossible, that Martin added the vegetable matter merely to disguise the arsenic, reposing, at the same time, *all* his confidence in the arsenic alone. I think it more probable, however, that the superior efficacy of Martin's powder, and of the powders in the hands of other empirical practitioners, has been, in part, owing to the addition of something to the arsenic. If there be *no* foundation for this suspicion, how has it happened,



that in the management of cancers, the empirical practitioners have often succeeded so much better with their medicines than the regular physicians have done? Both use arsenic. Some of the cancer-powders, employed by empirics, in Europe, are known to have been composed, in part, of arsenic and a vegetable matter. The celebrated powder of Plumked was made up of arsenic, the root of a species of *Ranunculus*, or Crow-foot, and sulphur.

“Whatever may have been the vegetable which Martin used in combination with arsenic, it is certain, that the powder of the *Orobanche*, or Cancer-root, has been of great service (in Philadelphia, &c.) externally applied to obstinate ulcers, some of which had resisted the applications that are commonly made use of in such cases. It would be well to try the effects of this vegetable in those dreadful ulcerations, by some writers deemed cancerous, which are too frequently the consequence of the use of mercury, when it has been given in large quantity. Cases of the kind I allude to, are recorded by Dr. Donald Monro, Mr. Adams, in a valuable work, and other writers. I have had occasion to see some ulcerations of the same kind in Philadelphia. They often refuse to yield to stimulating or to mild applications.

“With the view to encourage further enquiry into the nature and properties of the *Orobanche Virginiana*, I may here mention, that one of the European species of this genus, the *Orobanche major*, or



Greater Broom-rape, is a very powerful astringent, and is said to have been found useful, externally applied, in cases of ulcers. This I mention on the respectable authority of sir John Floyer. The activity of the European plant may even be inferred from the fact mentioned by Schreber, that cattle do not eat it.”\*

It would seem then, that the cancer-root is an active vegetable, and it would be naturally expected, from the foregoing account of its effects, to be considerably astringent. This is the fact, and its astringency is very perceptible to the taste in the recent, and in the dry plant. When fresh, the plant is also bitter and nauseous to the taste; exsiccation seems to lessen in some degree its sensible properties.

Dr. Barton tells us “it has been celebrated in dysentery.” He does not mention the manner nor the dose in which it has been administered in that complaint; and as I have never administered it myself internally, I am not prepared to offer any opinion on the subject.

Upon the whole, the cancer-root may be justly said to have a claim to the attention of physicians and surgeons, for further and more extensive trials of its virtues than have heretofore been made. (For the Chemical Analysis, see Appendix.)

\* Barton's Collections, ed. 3d. par. 2. p. 6.

TABLE XXVII.

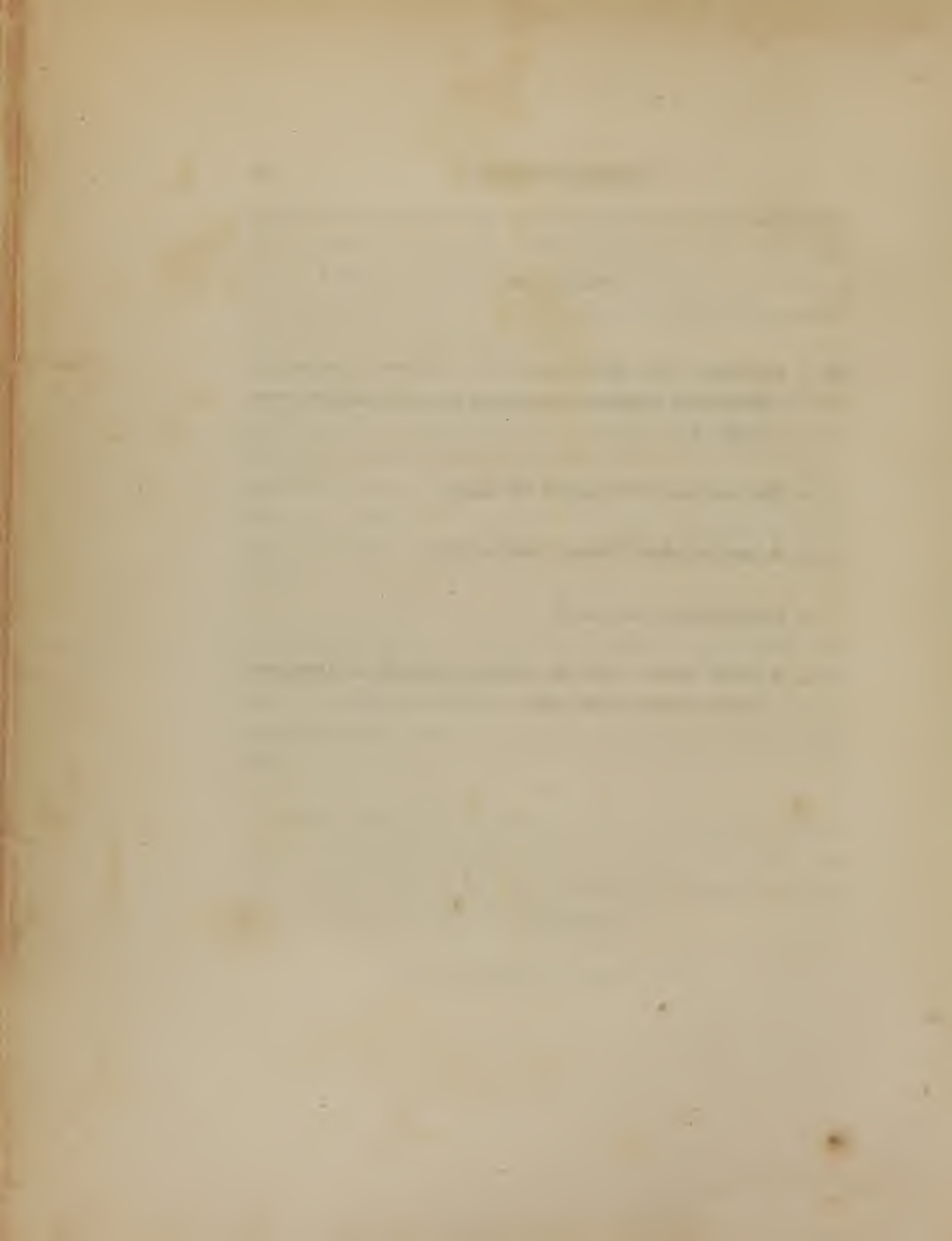
Fig. 1. Represents the upper portion of a flowering specimen of *Orobanche Virginiana*, separated from the thickest stem of No. 2.

2. The root and lower part of the same.

3. A tubular infertile flower, with its calix.

4. Calix, stamens, and pistil.

5. A fertile flower with the gibbous germ full of immature seeds, situated in the calix.









From the Garden of the University of Cambridge

ARISTOLOCHIA PICTA, L.

(Painted Aristolochia)

From the Garden of the University of Cambridge

## ARISTOLOCHIA SERPENTARIA.

### VIRGINIAN SNAKE-ROOT.

Snakeweed Root. Snake-root Birthwort.

*Germ.* Die Schlangenosterluzey, die Virginische Schlangen oder Vipernwurzel.—

Arzeneykräftige Osterluzey. (Willd.)

*Dutch.* Slangenwortel, Virginische Slangenwortel.

*Danish.* Slangrød.

*Swedish.* Ormrot.

*French.* L'aristoloche serpentinaire, *vulg.* Serpentinaire ou Coluvrine de Virginie.

*Portugu.* &c. Serpentaria de Virginia.

ARISTOLOCHIA serpentaria. L. Sp. Pl. 1363. Mat. Med. 196. Gron. Virg. 140. Mill. Dict. n. 6. Pluk. Alm. 50. t. 148. f. 5. Catesb. Car. 1. p. 29. t. 29. Raj. Suppl. 394. Mor. Hist. 3. p. 510. s. 12. t. 17. f. 14. Pluk. Alm. 50. t. 78. f. 1. Willd. Sp. Pl. tom. iv. par. 1. p. 159. Walt. Carol. 223. Woodv. ii. 291. t. 106. Gron. Virg. ed. 1st. 112. Park. theatr. 420. Ger. by Johns. 848. n. 6. line 16th? Bannister in Phil. Trans. Abr. ii. 644. Alst. 1. 520. Chalm. 1. 67. 149. 152. 155. 165. 186; ii. 6. 115. 167. 208. Hume in Lett. and Ess. 257. Lew. ii. 364. Mead. Mon. ii. 90. Ploucq. Bibl. 1. 506. 516. Pott. iii. 158. Quarin. Febr. 36. 69. 92. 121; animad. 176. Smyth Jail Dist.

*Aristolochia serpentaria.*

121. Stoll. Med. iii. 109. Underw. 1. 77. 259. Pharm. Edin. Hoven, account from, in Med. Rev. ii. 363. Lew. Disp. by Dunc. 153. Murr. J. i. 184; ii. 69. Pearson, R. i. 245; ii. 170; ed. 2d. 328. Valentine, account from, in Chir. Rev. xi. 240. Pharm. Lond. Berg. 716. Bruce in Lind. Hot Clim. 254. Cartheus. iii. 68. Cold. in Med. Obs. i. 221. Cull. ii. 85. Dale 194. Douglas, account from, in Med. Ess. iv. 390. Fuller. Pharm. 75. Geoffr. ii. 141. Herm. 36. Hill 61. Hillary Barb. 128. 165. Lin. 235. Mead. Mon. i. 33. 46. Mill. Jos. 410. Monro, iii. 265; Sold. 258. Murr. i. 348. Robertson Fev. 375. Rutty. 482. Schoepf. 131. Spielm. 297. Stoll. Med. 1. 8. 45. 54. aph. n. 678. Underw. 1. 94. Vog. 211. Wintringh. in Mead. 1. 223. 230. Pharm. Austriaco. Prov. 67. Clark. Long Voyag. 175. 261. Hume, in Lett. and Ess. 229. Jackson Jam. 236. 322. 333. Lempr. ii. 162. 174. 191, 192. Lind. Hot. Clim. 104; Seam. 202. Moseley 162. 169. 222. Pott iii. 359. Pringle 274; app. 108. Lind. Seam. 259. Pringle 311. Rush v. 182. Bisset Ess. 75. Stokes's Bot. Mat. Med. ii. p. 275. Barton's Collections, 3d. ed. Coxe's Disp. 3d. ed. 201. Thatcher's Disp. 3d. ed. p. 151. Pharm. Mass. Med. Soc. 7. Barton's Cullen, ii. 59, 60, 61. Dyckman's Edin. Disp. 183. Pursh. Fl. Am. Sep. ii. 596. Mich. Fl. Boreali-Am. ii. 162. Muhl. Cat. 85. Nutt. Gen. Am. Pl. ii. 199. Bart. Prod. Fl. Ph. 87. Bart. Comp. Fl. Ph. ii. 146.

## ARISTOLOCHIA.

Gen. Pl. ed. Schreb. n. 1383.

Nat. Syst. Juss. *Aristolochiæ*. Classis VI. Ordo I.

Nat. Ord. Lin. *Sarmentaceæ*.

Artificial Syst. Lin. Classis *Gynandria*. Ordo *Hexandria*.

*Cal.* none. *Cor.* 1-petala, ligulata, basi ventricosa. *Caps.* 6-locularis, polysperma infera.

ARISTOLOCHIA, T. L.\* *Aristolochie*. Calix coloratus tubulosus, basi ventricosus, apice dilatatus, in ligulam extensus, antheræ 6-subsessiles sub-stigmate. Stylus subnullus; stigma 6-partitum. Capsula 6-gona, 6-locularis. Caulis erectus aut volubilis; folia alterna; flores axillares; tubus quorundam scyphiformis incurvus. Juss. Gen. Plant. ed. 1789. p. 73.

*Calix* none. *Corolla* of one petal, ligulate, with a ventricose base. *Capsule* six-celled, many-seeded, inferior.

Gen. Ch. *Cal.* none. *Cor.* Monopetalous, tubular, irregular; base swelling, subglobular, tortulose; tube oblong, hexagon-cylindric; limb dilated, extended below into a long tongue. *Stam.* Filaments none; anthers six, fastened at the bottom of the stigmas, four-celled. *Pist.* Germ oblong, inferior, angular; style scarcely any; stigma sub-globular, six-parted, concave. *Per.* Capsule large, six-angled, six-celled. *Seeds* several, depressed, incumbent. Ency.

Ess. Gen. Ch. Stigmas six. *Cal.* none. *Cor.* Monopetalous, tongue-shaped, entire. *Caps.* six-celled, inferior.

ARISTOLOCHIA serpentaria: foliis cordatis oblongis, acuminatis, caule flexuoso adscendente, pedunculis radicalibus, corollæ labio lanceolato. Willd.

Leaves cordate, oblong, acuminate; stem flexuous, adscendent; peduncles radical; lip of the corolla lanceolate. B.

#### SYNONYMA.

ARISTOLOCHIA pistolochia, s. serpentaria Virginiana, caule nodoso. Pluk. Catesb.

ARISTOLOCHIA pistolochia, caule nodoso; s. serpentaria Virginiana. Raj.

ARISTOLOCHIA polyrhizos Virginiana, fructus parvo pentangulari. Moris.

POLYRHIZOS Virginiana. Park.

PISTOLOCHIA Virginiana. Ger. by Johns, (the figure is *A. sempervirens*.)

PISTOLOCHIA, or Serpentaria Virginiana. Bannister.



SERPENTARIA Virginiana of some Pharmacopœias and medical writers, as quoted in the list of references.

SERPENTARIA Virginica. Pharm. Austriaco. prov.

SNAKE-ROOT of Clark, Hume, Jackson, Lempr., Lind, Moseley, Pott, Pringle, &c. &c.

VIRGINIAN Snake-root of Lind. Seam. 259. Pringle, 311. Rush, v. 182. Underw. &c. &c.

SERPENTARY of Blane.

SNAKEWEED-ROOT of Bisset.

VIPERINE of Chom.

#### PHARM.

*Off.* The root.

ARISTOLOCHIE serpentariæ *Radix.* Ed.

SERPENTARIÆ *Radix.* Lond.

SERPENTARIÆ Virginianæ *Radix.* Dub.

#### OFFICINAL PREPARATIONS.

TINCTURA Aristolochiæ serpentariæ. Edin. Lond. Dub.

TINCTURA Cinchonæ compositæ. Lon. Dub.

ELECTUARIUM Opiatum. Edin.

CATAPLASMA Cumini. Lond.

THE little plant which is the subject of this article, is well known in physic, having been long employed by practitioners of the healing art in many parts of the world, and always with the effect

of supporting its reputation as an important, active and useful medicine. It belongs to a genus containing about forty-one species, twenty of which are shrubby and indigenous to the tropical regions of America. One of these is described by Baron Humboldt, as growing on the borders of Madalena, which produces flowers so large as to afford hats for children. Several species are endued with medicinal virtues, but none in so remarkable a degree as the present one. The *Aristolochia rotunda*, *A. longa*, *A. Clematitis*, were formerly admitted into the *Materia Medica* of the British pharmacopœias; and the last is still retained by the Edinburgh College.

The generic term *Aristolochia*, (Birthwort,) is derived from *αριστος*, and *λόχια*, or *λόχισια*, from the supposed use of the plants it comprises, in disorders attendant on parturition. The species indigenous to North America, according to Muhlenberg, are four in number, *A. siphon*, (broad-leaved Birthwort, or Dutchman's pipe;) *A. serpentaria*, (snake-root,) *A. hirsuta* (hairy Birthwort,) and *A. sagittata*, (arrow-leaved Birthwort.) On an examination of the specimens of these species in the Muhlenbergian Herbarium, the *serpentaria*, *hirsuta* and *sagittata*, appeared very closely allied; and on tasting and smelling the roots I could perceive no difference in their sensible properties. The *A. hirsuta*, is the *tomentosa* of Mr. Nuttall; and the *A. sagittata*, of which I have given an outline figure of two leaves from different specimens, (Fig. 6, 7.) is the *hastata* of Mr. Nuttall. This is hardly a distinct species, unless there be some well marked discrepancy in the flowers.

The most common species in the United States, is the *serpentaria*. It has a perennial root, consisting of very numerous small fibres, proceeding from a short gibbous caudex. The small roots are of a yellow ochre colour, and become deep brown or black, on drying. The thick and knotty portion of the root is brown. The stems are slender, round, weak, flexuose, from eight to ten inches high, and jointed at irregular distances. The upper portion is yellowish, the lower purple.

The leaves are lanceolate-cordate, entire, acuminate, of a yellow-green colour, and have short petioles. The flowers are solitary, and consist of a monopetalous, brownish purple, tubular and irregular corolla, without any calix. The peduncles which are slender, round, and jointed, and occasionally garnished with a scale or two, are radial or nearly so, and so arcuate as to bury the flower for the most part beneath the earth or dead leaves near the roots. The filaments are wanting, and the six anthers are attached to the stigma, which is nearly globular. The hexagonal capsule is dark brown, and consists of six cells, which contain several minute flat seeds. This plant flowers in May and June, and ripens its seeds by the last of September. It inhabits rich shady woods from New England to Carolina, and Pursh says it is particularly abundant in the mountains. In the neighbourhood of this city it is not common; it is however found in some of our woods, both on the east and west side of the Delaware.

## CHEMICAL ANALYSIS.

“Snake-root has an aromatic smell, approaching to that of valerian, but more agreeable, and a warm, bitterish pungent taste, which is not easily concealed or overpowered by a large admixture of other materials. It gives out its active matter both to water and rectified spirit, and tinges the former of a deep brown, the latter of an orange colour. Greatest part of its smell and flavour is carried off in evaporation or distillation by both menstrua: along with water there arises, if the quantity of the root submitted to the operation be large, a small portion of pale-coloured essential oil, of a considerable smell, but no very strong taste, greatest part of the camphorated pungency, as well as bitterness of the root, remaining in the inspissated extract. The spirituous extract is stronger than the watery: not so much from its having lost less in the evaporation, as from its containing the active parts of the root concentrated into a smaller volume; its quantity amounting only to about one-half of that of the other.”\*

“Treated with alcohol it affords a bright green tincture, which is rendered turbid by water; by filtration a small portion of green matter is separated, but its transparency is not restored. It neither

\* Lewis, M. M. p. 602.



precipitates tannin nor gelatin, nor affects the salts of iron or tincture of turnsole. When the diluted tincture is distilled, the spirit and tincture pass over milky, strongly impregnated with its peculiar flavour.”\*

#### MEDICINAL PROPERTIES.

It is remarkable that the snake-root, which is so deservedly esteemed as a medicine, has no reputation among regular practitioners as a remedy for those affections for which it was first brought into notice. It is now universally acknowledged to be useful in certain diseases, for which it was not thought of as a remedy, until a considerable period subsequent to its introduction into medical practice.

In 1635, Dr. J. Cornutus published at Paris, a work entitled “*Canadensium plantarum, aliarumque nondum editarum, Historia* ;” and in that book noticed the serpentaria under the name of *Radix Sanagroel Nothæ Angliæ*, and extolled it as an effectual remedy for the bites of the most poisonous serpents.† The ancient and now exploded doc-

\* Edin. Disp.

† M. M. vol. 1. p. 521.

trine, that the morbid matter of malignant fevers was analogous to the poison of serpents, and that its influence on the human system might be obviated by the same means, led to the employment of the snake-root in all fevers of a malignant type.\* In accordance with those notions, this plant was considered the most powerful of the medicines termed alexipharmics, or antidotes to poisons.† But this practice, originating in the erroneous ideas of the old physicians, was not without its usefulness. The employment of snake-root in malignant fevers, led to its more general use in fevers of another kind; and it was not long before, by the united consent of the medical world, this plant was acknowledged to be a powerful diaphoretic stimulant and tonic; and peculiarly suited, from the antiseptic virtue which it is generally believed to possess, to such cases of disease as required powerful remedies endued with such properties. The high authority of Lind, Huxham, Hillary, Lysons, Monro, Cullen, Rush, and others, is not wanting to support the claim of *serpentaria* to a distinguished rank in the *Materia Medica*. It has been recommended to be used in combination with Peruvian bark, in intermittent and continued fevers; and the bark has been found more efficacious when thus used in union with the *serpentaria*, than when employed alone.‡ It should be recollected, that the medical powers of this plant depend

\* Woodville Med. Bot. vol. 2. p. 292.

† Ibid.

‡ Woodville and Lysons' Practical Essays upon Intermitting Fevers, p. 13.

chiefly on an essential oil, which it abundantly yields ; and as this, like most other essential oils, is heating and stimulating, the snake-root, consequently, cannot be safely administered when the pulse demands blood-letting. But in the secondary stage of fevers, or after the inflammatory action has subsided or been subdued ; and especially when the skin is obstinately dry, the paroxysms not terminating by sweat, then the serpentaria may be used with much advantage. It produces an immediate action on the skin, and is gently diuretic. During a very extensive practice in Norfolk, Virginia, in the years 1809 and 1810, while surgeon of the frigate United States, I had many opportunities of witnessing the efficacy of the serpentaria in cases similar to those above described, as well as in typhus fever. The sick lists were daily crowded with cases of fever incident to that climate, and arising from the exposure of the crew ; and at one time they contained cases of typhus to the daily number of from twenty to forty for a month or six weeks together. It was my constant practice to use the serpentaria in those fevers, in various ways, as tincture, (the officinal,) in substance, and in union with camphor and Peruvian bark. In no instance had I reason to be dissatisfied with this practice, to which I have adhered in a multitude of similar cases since that time, with the same beneficial effect. While I was attending physician of the army in the fourth military district, during the late war, the hospital for recruits, and the lazaretto hospital, where I also prescribed, were continually crowded with cases of pneumonia typhoides. Many of the subjects of this disease, were afflicted with

unusual malignant symptoms, and great tendency to rapid prostration of the system. Encouraged by my former success, I used the serpentaria still more extensively, often alone, but most commonly with camphor, polygala senega and Peruvian bark. In some instances, the malignity of the disease made rapid strides to dissolution; but in not a few I had every reason to believe the use of the snake-root had been of infinite service, particularly in relieving bilious vomiting. Upon the whole, I am inclined to think that the serpentaria is entitled to a much more general use in our fevers with putrid tendency, than is usual. Throughout the United States, the country practitioners are much more in the habit of prescribing it in autumnal and other fevers, than the physicians of large cities, but as their voices are united in favour of the success of that practice, it would be well if it were more commonly imitated. The antiseptic virtues of serpentaria have led to its use in gangrene; and it is often externally applied as a gargle in putrid sore throat. It has been found serviceable in dyspepsia, and has been known to remove the disease in a short time, and remarkably to renovate and strengthen the lost tone of the stomach. It has also been recommended in exanthematous diseases, when the fever is of the typhoid type, to support the action of the skin, and keep out the eruption. I have known it used in tincture, on the borders of York and Elizabeth rivers, in Virginia, as a prophylactic against agues.



## TABLE XXVIII.

Fig. 1. Represents the *Aristolochia serpentaria* in flower, of the natural and common size.

2. A section of the corolla, with the germ.

3. The capsule.

4. A seed.

5. The reverse of the same.

6. A leaf of the variety in the Muhlenbergian Herbarium.

7. Another leaf from a different specimen in the same.





Painted by W. H. Bart

Engraved by A. C. S. 6

BAPTISIA TINCTORIA.

(Wild Indigo.)

## BAPTISIA TINCTORIA.

### WILD INDIGO.

Indigo-weed. Horse-fly-weed. Broom.

*Germ.* Färbende Podalyria. (Willd.)

**BAPTISIA tinctoria.** L. Sp. Pl. 534. Mant. 377. Mill. Dict. 3. Lamarck Illustr. Gen. t. 327. f. 1. Houttuyn. Lin. Pfl. Syst. 6. p. 500. Willd. Sp. Pl. tom. ii. par. 1. p. 503. a. Murr. 391. Hort. Kew. ii. 534. Gron. Virg. 64. Pluk. Alm. 129; Phyt. t. 86. f. 2. Ehret. t. 1. f. 3. Schoepf 63. Cutler 473. Mich. Fl. Boreali-Am. i. 265. Pursh Fl. Am. Sep. i. 308. Nutt. Gen. Am. Pl. i. 281. Muhl. Cat. 42. Bart. Prod. Fl. Ph. 48. Bart. Comp. Fl. Ph. i. 206. Big. Florula Bost. 104. Thacher's Disp. 3d. ed. 360. Coxe's Disp. 3d. ed. 567. Brown in Hort. Kew. vol. 3. p. 5. Bot. Mag. 1099. Woodville Med. Bot. ii. 292. Dyck. Ed. Disp. 382. Comstock in Eclec. Rep. vol. 6.

### BAPTISIA.

**VENTENANT.** R. Brown.

**PODALYRIA.** Michaux, Lamarck.

**SOPHORA.** Lin.



Nat. Syst. Juss. *Leguminosæ*. Classis XIV. Ordo XI.

Nat. Ord. Lin. *Papilionaceæ*.

Artific. Syst. Lin. Classis *Decandria*. Ordo *Monogynia*.

*Calix* half 4 or 5-cleft, bilabiate. *Corolla* papilionaceous, petals nearly equal in length; vexillum laterally reflected. *Stamina* deciduous. Legume ventricose, pedicellate, many-seeded.—Brown Hort. Kew. 3. p. 5.

*BAPTISIA tinctoria*; glaberrima, ramosissima, microphylla; foliis ternatis subsessilibus, foliis cuneato-obovatis rotundato-obtusis, stipulis obsoletis oblongis acutis petiolo multoties brevioribus, racemis spicatis terminalibus; leguminibus ovatis longo-stipitatis.—Willd. and Pursh.

Very glabrous and much branched, small-leaved; leaves ternate, subsessile, folioles cuneate-obovate, round, obtuse; stipules obsolete, oblong-acute, much shorter than the petiole; racemes spiked, terminal; legumes ovate, on long footstalks.—Bart. Comp. Fl. Ph.

#### SYNONYMA.

*SOPHORA tinctoria*. Sp. Pl. 534.

*PODALYRIA tinctoria*. Mich., Lam., and Wild.

#### PHARM.

*BAPTISIÆ tinctoriæ*, Radix et Herba.

THE subject of this article was originally referred by Linnæus to the extensive genus *Sophora*. Michaux, Lamarck, Willdenow, and others, assigned it a place under the genus *Podalyria*: and more recently it has been placed by Brown and Ventenat, as a species of

Baptisia. The latter name is given here, because it more properly belongs to the genus it designates, than to either of the other two. This fine, luxuriant, bushy plant is a native of North America, and is almost universally known by the English name at the head of this chapter.

The root is perennial, large, ligneous, irregularly shaped, of a bistre colour, inclining to black externally, and yellowish within. The radicles proceeding from the main root, which is occasionally ramified, are numerous, and of a lighter colour than the caudex. The stalks are two or three feet high, round, yellowish-green, smooth, and covered with an infinite number of black dots. They are much ramified, and become more yellow towards their extremities. The leaves are small, seldom larger than the thumb-nail, ternate, cuneate-cordate, nearly sessile, and of a deep indigo-bluish-green. The stipules are very minute and evanescent. The flowers are gamboge-yellow, becoming black, (as indeed the whole plant does upon drying,) after being plucked, or sometimes even while they remain on the bush, after bloom. They are numerous, and situated in loose spikes on the extremities of the branches, and are supported by slender peduncles. The seed-vessel is an inflated, oblong pod, of the same bluish hue as the mature leaves, inclining to crow-black. The period of flowering is from the beginning of July to the middle and last of August.

Wild indigo is a common plant in the United States, being found in every state of the union. It promiscuously inhabits a variety of situations, though almost always in a dry soil. It seems to prefer the borders of dry hilly woods, being found in most abundance in such places ; yet the borders of thickets, and the edges of cultivated fields, are frequently decorated by the numerous gay flowers of this pretty plant. It is seldom seen in moist situations ; though on the edges of low woods in Jersey, and sometimes in the marshy thickets it is met with : and it must be acknowledged, that in these situations it does not appear to deteriorate ; so that I fancy it possesses a flexible constitution, enabling it to accommodate itself with facility, to many scites widely discrepant in the nature and effect of their peculiar soils.

#### MEDICINAL PROPERTIES.

Both the root and plant may be used for medical purposes. The former has no smell, but is subacid and a little nauseous to the taste. This remark applies only to the bark of the root, which is thick. Though wild indigo is manifestly an active plant, it has excited, hitherto, comparatively, little attention among any other than empirical practitioners ; but among the latter I am strongly inclined to suspect it is very generally used. It has happened to me on several

occasions during my herborizing excursions, to meet with negroes and others, collecting large quantities of this plant, which they always spoke of by the name of wild indigo. My enquiries of these people, who in every instance, except one, were collecting for other persons, convinced me the search for the plant was for medical purposes. It does not, however, appear likely, that in any other way than as an external application, the *Baptisia* will become useful in medicine. I am inclined to offer this opinion, from my own trials with it, and those of other persons. Yet, as an external remedy in certain affections presently to be mentioned, it is far from being devoid of usefulness ; and I here present it to the notice of physicians, as an antiseptic and sub-astringent plant, capable of correcting the vitiated discharges of foul and gangrenous ulcers ; and checking the progress, perhaps, of mortification, when used simultaneously with the internal administration of Peruvian bark. The cathartic and emetic effect which has occasionally followed its use in large quantities, should, I think, be disregarded as far as any benefit may be expected from their effects ; neither do I believe the diaphoretic effect which has supervened upon the free use of the decoction and infusion, in my own hands, and in the trials made by others, is entitled to any attention ; because, like its purgative and emetic effect, it only followed the use of the article, pushed to considerable and inconvenient extent. It is also slightly stimulant, both in the powder and in the decoction of the root, but probably not more so, than any active substance introduced into the stomach.



After premising these cautionary remarks, I shall notice the extent of the information relative to the medical powers of this plant, as contained in the only two publications of any claim to authority, that have met my eyes; the Dispensatory of Dr. Thacher of Plymouth, (New Eng.) and a paper by Dr. Comstock, published in the Eclectic Repertory. To these gentlemen, confessedly, is due the credit of bringing this plant into notice, which will sufficiently excuse my giving in their own language the result of their experience. "In the hands of some physicians," says Dr. Thacher, "it is found to operate in a large dose, with much severity as an emetic and cathartic. But a weak decoction of the root has frequently been given with the effect only of a mild laxative. A decoction of the bark of the root has, it is said, been made known by an empiric experienced in its use, as a remedy in scarlatina anginosa; and its employment has been extended in a few instances to typhus or putrid fever with such good effect as to encourage further trials. An experienced physician considers it as an excellent antiseptic and febrifuge, preferring it in some fevers to Peruvian bark. As an external application, its antiseptic qualities ought to be more extensively known. In the form of fomentation or cataplasm it has proved eminently beneficial when applied to phagedenic and gangrenous ulcers, especially if the decoction be administered internally at the same time.

"Some experiments have been made with the pulverized root in doses of twenty to thirty grains, for the purpose of ascertaining its

emetic and cathartic powers, but without a very favourable result. It appears to possess valuable antiseptic properties, as an external application to vitiated ulcers of almost every description ; an infusion of the root has surpassed in efficacy any other remedy which I have ever employed. In aphthous and other ulcers of the mouth, sore nipples, chronic sore eyes, and in various painful ulcers, discharging acrid matter, the assuaging and healing qualities of an infusion of wild indigo root has answered every expectation in practice. Impressed with the assurance of its great utility, and solicitous to diffuse an experimental knowledge of it more extensively, I was induced to furnish several medical friends in Boston with the root, to be used in the marine hospital and in the almshouse, particularly in cases of syphilitic ulcers ; nor has the result disappointed my sanguine expectations. In their hands it has proved extremely beneficial when applied to venereal ulcers, mercurial sore mouth, and other ulcerous affections. In malignant ulcerous sore throat, no opportunity has presented for trial, but the happiest effects are anticipated in that disease, as well as others of a putrid nature. An ointment may be made by simmering the fresh root in hogs lard, or in cream, to be applied to burns and ulcers. The virtues of the root appear to be considerably diminished by long keeping.”\*

Dr. Comstock, of Rhode Island, has had considerable experience with this article, and he details† an instance of its successful exhibition,

\* Thach. Disp. p. 361.

† Eclectic Repertory, vol. 6.

in a case of inverted uterus. The Baptisia was used in decoction, as a local application to the protruded viscus which was nearly gangrenous, at the same time that bark was given internally, and he remarks, "as to the remedy used in this case to stop the progress of gangrene, (Sophora tinctoria,) I am disposed to consider it a very powerful antiseptic; having, besides the above, used it in a great many other cases wherein mortification was threatened or actually present, with the most decided benefit, both externally and internally." The same gentleman has recently corroborated the above favourable statement of the antiseptic virtues of this article, in a letter addressed to a gentleman\* in our University, who has made this plant the subject of his inaugural dissertation. "I would observe," says Dr. Comstock in the letter alluded to, "that it is used in cases of mortification, in fevers supposed to be putrid, and inclining to putrescency, and in general where antiseptics are indicated. In cases of mortification it is used as a poultice, applied externally, or in strong decoction as a fomentation. When used internally, I consider an ounce of the recent root to a pound of boiling water, about a suitable proportion. The quantity to be administered of this decoction, is half an ounce, in from four to eight hours. If it proves cathartic, the quantity is to be diminished, or laudanum to be given with it. I consider it to be the most powerful antiseptic in use, and it is very frequently resorted to by the people in this part of the country, and by some practitioners of medicine."

\* Mr. Weems.



The foregoing remarks are unquestionably entitled to much credit. They are amply sufficient to induce an extensive use of the wild indigo for its antiseptic virtues, and I am glad to say, that my own trials of the decoction as an external application to foul ulcers, fully corroborates the reports of Drs. Comstock and Thacher.

#### **ECONOMICAL USES.**

The young shoots of this plant, which resemble asparagus in appearance, have been used in New England as a substitute for it. Like the young shoots of poke, however, they have occasionally produced drastic evacuant effects.

The very common practice in the country of placing this plant about the harness of horses, to kill or drive away flies, has given it in some places the name of Horse-fly-weed. It is supposed that the leaves and flowers contain something noxious or deleterious to the flies, for it is said, I know not with what truth, more effectually to keep off those insects, than any other plant.



## TABLE XXIX.

Fig. 1. A flowering twig of *Baptisia tinctoria* of the size of nature, culled in the month of August, when the capsules begin to be formed.

2. The vexillum or banner of the corolla.
3. One of the wings.
4. The carina or keel.
5. Calix, stamens, and pistil.
6. Pistil.
7. The calix.





ASPERULA COLUMELLA.

[Yucca filig. Calamita]

## ACORUS CALAMUS.

### CALAMUS. SWEET-FLAG.

*Germ.* Vielleicht der acorus der Alten; Acorus verus Calamus officin.; Acorus odoratus.

Der Kalmus oder Calmus; die wohlriechende Schwertlilie. Gemeina Calamus. (Willd.)

*Dutch.* Kalinus.

*Dan.* Kalmus, Calmus.

*Swed.* Kalmuss.

*Engl.* The sweet smelling flag; sweet cane; sweet grass; myrtle-flag; sweet myrtle-grass.—*Galic.* Milsean-mara.

*French.* L'acore odorant. *Lamarck*; L'acorus véritable. *Bom.*

*Ital.* Acoro, calamo odorato, canna odorifera.

*Span.* Acoro cálamó. (Im arancél de rentas y diezmos del año de 1709 wird er *calahis* genannt.)

*Port.* Acoro calamo; canna cheirosa.

*Russ.* Koren, Ir.

*Poln.* Tatarskie ziele.

*Bohm.* Pruskworek, Prasskworec.



*Hunga.* Kalmuss.

*Lett.* Kalmus sakkenes, karweles, Karili. *Fischer.*

*Ehstn.* Kalmusfid, kalmus; So ingwer.

*Fran.* L'acorus des Indes ou asiatique. *Bom.*—La bassombe. *Lamarck.*

*Malab.* Waembu. *Rheed.*

*Ceylon.* Vazumbo.

*Java.* Deryngo.

*Japan.* Kawa sobu. *Thunb.*

*Bra.* Bembi.

*Egypt.* Cassabel, Bamira.

*Hebr.* Kneh-boschem.

**ACORUS CALAMUS;** Ait. Hort. Kew. 1. p. 474. Roy. Lugd. 6. Fl. Suec. 277. 297. Mat. Med. p. 96. Hall. Helv. n. 1307. Gmel. lib. 1. p. 1. Scop. Carn. n. 426. Pollich. Pal. n. 343. Ludw. ect. t. 34. Kuiph. Cent. 9. n. 3. Hoffm. Germ. 123. Roth. Germ. i. 153. ii. 398. *α. Acorus vulgaris*, Bank. Pin. 34. Hort. Cliff. 137. Blackw. t. 466. Mor. Hist. 3. p. 246. s. 8. t. 13. f. 4. Tabern. 642. *β. Acorus verus*, Herm. Lugdb. 9. Fl. Zeyl. 132. Garz. 288. c. Rumph. Amb. 5. p. 178. t. 72. f. 1. Rheed. Mal. 11. p. 99. t. 60. Houttuyn. Lin. Pfl. Syst. 6. p. 354. Smith. Brit. Fl. 373. Engl. Bot. t. 356. L. Suec. n. 297. Sp. Pl. 462. Willd. Sp. Pl. tom. 11. par. 1. p. 199. Woodville Med. Bot. 472. t. 173. Bot. Arrang. 357. Mich. Fl. Bor. Am. 1. 194. Huds. 147. Fl. Dan. t. 1158. Thunb. Japon. 144. Hort. 196. Scop. Carn. n. 426. Jacq. Vind. 60. Gouan. Hort. 18. Hist. ox. s. 8. t. 13. f. 4. Raii. Syn. 437. Lob. Adv. 29. Dalech. 1618. Clus. Hisp. 521. Lob. Obs. 30, inner fig. and ic. 1. 57. outer fig. Dod. 249. Repr. in Lob. Obs. 30, inner fig. &c. Ger. by Johns 62. Clus. Panr. 259. Cop. in Bankn. J. ii. 734. and Park. Theatr. 140, and Repr. in Ger. by Johns 62. Blackst. Haref. 2. Alst. 1. 356. Cutl. 435. Krock. n. 540. Schrod. 525. Ruttey 9. Dale 259. Geoffr. ii. 2. Herm. 8. Hill. 570. Mill. Jos. 12. Pharm. Edin. Lew. Disp. by Dunc. 127. Mur. J. 1. 195. Pearson, R. ii. 165. Pharm. Lond. Cartheus. iii. 60. Heberd. 161. Hufeland, account from, in Med. Rev. ii. 458. Lin. Hot Clim. 314;

Seam. 148. Monro iii. 36; Sold. ii. 128. 186. Moseley 169. Neum. ii. 200. Percival ii. 275. Ploucq. Bibl. 1. 129. 176. Quarin. Animad. 170. 172. 175. Spielm. 242. Vog. 189. Pharm. Suec. Berg. 274. Linn. 112. Mur. v. 39. Schoepf 49. Lew. 1. 251. Chom. 180. L. Sp. 463. Herm. Hort. 9. Jour. 1. 259. Boerh. ii. 167. Garzias, ap. Clus. exot. 200. Rheede xi. 99. t. 60.—*Acorus indicus*, Geoffr. ii. 5. Herm. 11. *A. asiaticus*, Dale 259. *A. verus*, Linn. 112. Mur. v. 39. Stokes's Bot. Mat. Med. ii. 283. *A. calamus*, Pursh. Fl. Am. Sep. i. 235. Muhl. Cat. 35. Bart. Prod. Fl. Ph. 43; Compend. Fl. Ph. i. 169. Big. Florula Bost. 83. Pharm. Mass. Med. Soc. 4. Thach. Disp. 3d. ed. 131. Coxe's Disp. 3d. ed. 177. Abbot. 77. Eng. Bot. 356. Dyck. Ed. Disp. 149.

## ACORUS.

Gen. Pl. ed. Schreb. n. 586.

Nat. Syst. Juss. *Typhæ*. Classis II. Ordo I.

Nat. Ord. Lin. *Piperitæ*.

Artific. Syst. Lin. Classis *Hexandria*. Ordo *Monogynia*.

*Spadix* cylindricus, tectus flosculis. *Cor.* 6-petalæ, nudæ. *Stylus* 0. *Caps.* 3-locularis.

**ACORUS**, T. L.\* *Spadix* cylindricus flosculis tectus. *Calix* 6-partitus persistens. *Stamina* 6, (calici inserta?) *Germen* 1; *Stylus* 0; *Stigma* punctum prominens. *Capsula* 3-gona 3-sperma, (3-locul. polysp. ex Lin.) *Spadix* innascens medio folio ultra producto æmulanti *spatham* planam. Affinior forté *juncis*, ex Bern. Jussæo.

Juss. Gen. Pl. ed. 1789. p. 25.

**ACORUS** *Calamus*; *scapo mucrone longissimo foliaceo*. Willd.

## SYNONYMA.

*TYPHA* aromatica, clava rugosa. Moris.

*ACORUM* legitimum. Tabern.

*CALAMUS* aromaticus. Garz.

*ACORUM*. Rumph.

*WAEMBER*. Rheed.

## PHARM.

*ACORI Calami Radix*. Edin.

*CALAMI Radix*. Lond.

*ACORI Radix*. Dub.

*CALAMUS* is a fine aromatic, and well-known aquatic plant. It is truly indigenous to our states, and though not specifically, is slightly different from the foreign vegetable. It is a species of the genus *Acorus*, a term derived from *αορη*, the *pupil*; having been formerly esteemed peculiarly beneficial in disorders of the eye. There are only two described species, the subject of this chapter and the *A. gramineus*, which is cultivated in China. Of the *A. calamus*, European writers describe two varieties, the *vulgaris*, European sweet-rush, sweet-smelling flag or *calamus aromaticus*, and the *verus seu Asiaticus*, Indian sweet-rush, or *calamus aromaticus*. The former is said to be distinguished by "its long sword-shaped leaves, resembling those of the flag, but narrower, of a brighter green, and yielding, when broken, a strong aromatic scent; and also by its oblique cylin-

dric spike of flowers, proceeding from the side of the stem at the edge of the leaf, which spike is generally single, sometimes double, and more rarely triple, or quadruple. It grows naturally on the banks of rivers, and in shallow standing waters ; and is found in many parts of England ; and plentifully in the standing waters and canals of Holland, and is, besides, common in many parts of Europe.”\* The other variety is called the Indian calamus, and grows not only in marshy ditches, but in more elevated and dry places in Malabar, Ceylon, Amboyna, and other parts of the East Indies ; it is said to differ little from the European, except in being a little more tender and narrow, and of a more hot and pungent taste. The shops are usually supplied with this article from the Levant : but such roots are said not to be superior to those of the plant indigenous to England ; and the same may be said respecting that indigenous to the United States, a figure of which is here given.

The root is perennial, rugose, horizontal, jointed, somewhat compressed, from half an inch to an inch thick, and from six inches to two feet long, sending off from the base, a great number of small and large round fibres, which are sometimes white, and often yellow. The joints are from half an inch to an inch long. They are white, tinged by triangular shades of sienna, rose-red and bistre, and often covered with numerous round elevated spots, occasioned generally by the insertion of the fibrous portions which have fallen off. From these joints, and from the point between the lateral union of the roots,

\* Edit. Article Acorus. Rees's Ency.



bunches of brown fibres resembling coarse hair, are always found when the plant has grown in its natural wet situations. The root is internally of a white spongy texture, and loses nearly one half of its diameter in exsiccation. Its odour is strong, aromatic, subtle and pungent, particularly when dried; and its taste very peculiar, being somewhat saccharine, and agreeably aromatic when first chewed, but upon mastication becoming bitter, acrid and nauseous. The leaves are long, sword-shaped, sheathing, especially at the base; and at their origin from the root are of a red colour mixed with green and white. The flowers are tessellately arranged on a spadix, coming out laterally from the middle of a foliaceous scape, which extends a considerable distance beyond it, so as to have the appearance of a leaf; and indeed it is generally said by botanists, that the spadix proceeds from a leaf. This spadix is solitary, from one and a half to two inches and a half long, something less than half an inch in diameter, cylindrical and attenuated at its base and apex. It is crowded spirally with numerous small greenish-yellow flowers, consisting of six small concave membranous truncated petals, without any calix, and stamens varying in number, from six to five and four, which have thick filaments and double anthers. The germen is gibbous and without any style, being crowned by a pointed stigma. The capsule is somewhat oblong, and contains a great number of small thin seeds in its numerous cells. Its favourite situations are the borders of rivulets, creeks, and small running streams, where it is generally emerged half its height in the water. In these situations it is found in company with different species of Iris, and Typha, (cat's-tail or bull-

rush) all which are indiscriminately known by the common name of flag. It is often, however, found in swampy meadows, old ditches, overflowed places, and low moist grounds contiguous to water. It flowers in May and June, at which time it may readily be distinguished from the other plants called flags. Calamus is a common inhabitant of the sites just specified, throughout the United States, and can seldom be sought for unsuccessfully, at the period of its florescence. When out of bloom, the smell of the roots, and indeed, of the whole plant, will readily direct to the spot where it grows.

#### MEDICINAL AND CHEMICAL PROPERTIES.

The root only of calamus is used in medicine. It is carminative and stomachic, and is used as an ingredient in many bitter infusions. It communicates, however, as has already been remarked, a nauseous flavour to such infusions. The root, when dried, has a warm and tolerably strong aromatic smell, and a pungent bitter taste. It contains an essential oil, to which is probably owing its peculiar taste, and the agreeable flavour it is known to communicate to the bitter infusions of which it is an ingredient; for the residuum after distillation has a nauseous flavour dissimilar to calamus. Hoffman\* obtained only two ounces of the essential oil from fifty pounds

\* Observat. Physico-chym. lib. 1. obs. 1.

of the root; but Neuman and Cartheuser obtained it in much greater proportions. It was formerly recommended by a writer of authority,\* in vertigo, proceeding from a vitiated stomach; and in intermittents, which are said to have been cured by this medicine, after the bark had failed.† To its reputed efficacy in scorbutic and hæmorrhagic complaints, in the words of Dr. Woodville, “little credit should be given, and still less to its supposed elexipharmic power.”‡ Calamus also stands as an ingredient in the renowned mithridate and theriaca, and in the compound powder of arum. The candied roots are said to be used by the Turks in Constantinople, as a prophylactic against contagion. The preparations of it enumerated by Murray,§ are, a dry confection of the roots, a distilled water and oil, a spirituous and aqueous extract, and the elixir vitæ Matthioli, and elixir vitrioli Mynsichti. The infusions in water are strongly imbued with the odour of the root, and have a moderately warm and very bitter taste. Spirituous tinctures are more warm and pungent than aqueous infusions, but much less bitter, and have but little smell, and water applied after spirit gains a considerable bitterness.|| Hence it is evident that water is a better menstruum than spirit to extract the medical virtues of

\* De Mayerne, Prax. Med. p. 59.

† Act. Societ. Med. Hav. vol. 9. p. 206.

‡ Med. Bot.

§ App. Med. 2. 5. p. 39.

|| Lewis, Mat. Med. p. 252. vol. 1.



calamus. According to Lewis, on distilling the spirituous tincture, the distilled spirit has scarcely any smell or taste of the root, and the extract has very little smell and much less taste than might be expected from so warm and pungent a root.\*

It may be necessary to remark, that the American variety of calamus does not differ in medical properties from that imported from Asia and the Levant; or from that indigenous to Europe. While it will be seen, that this article has a conspicuous rank in all European works on *Materia Medica*, it must be confessed it is at present but little used in this country. Yet the disuse into which it has, undeservedly I think, fallen, is more the consequence probably of that kind of fashion which sways in medicine as in other spheres, than to any want of confidence in the virtues of the medicine. As there is no good reason why this confidence should be impaired, it cannot be improper to urge a recourse to the use of this article, as extensive as its peculiar virtues merit. In my opinion, it is one of the most efficacious stomachics which the *Materia Medica* presents. Dr. Swediaur recommends it either in the form of extract, (dose half a drachm) or candied, in dyspeptic cases. My experience enables me to say that, in dyspeptic flatulency, and other disorders of the stomach, and in colic, it merits the marked attention of physicians. It has, in my practice, proved ener-

\* Lewis, *Mat. Med.* p. 252. vol. 1.



getically beneficial in that distressing complaint to which sailors are so frequently subject, from the nature of their life and diet, well known, particularly to naval surgeons, by the name of wind colic; given in hot decoctions in the manner of ginger tea, it quickly relieves the distressing swelling of the belly, by the discharge of wind. It may be chewed by dyspeptic persons, and the juice swallowed, rejecting the pulp; and in this manner it proves a pleasant remedy for indigestion, in the course of a week or two. I have on some occasions prescribed the hot infusion to infants labouring under colic, and with success. In intermittents I have had no experience with it, neither do I know of any authentic accounts on this point; though it has repeatedly been mentioned to me by country people, that they cure agues by the free use of the tincture. When masticated, it stimulates the salivary glands powerfully, producing a copious discharge of saliva. I have heard of its being used in this manner, with success, to cure the tooth ach.

**ÆCONOMICAL USES.**

Beckstein observes, that the leaves are noxious to insects: and it is well known that no kind of cattle will eat any part of the plant. It has been suggested therefore, that the leaves might be usefully employed in destroying the moths that infest woollen cloths, and the worms which injure books.\* M. Bautroth has used the whole plant for tanning leather; and it is supposed by Dr. Bohmer, that the French snuff, called *a la violette*, receives its peculiar scent from this root. Throughout the United States, it is used by the country people as an ingredient in making wine bitters

\* Mease's Edit. Dom. Ency.

## TABLE XXX.

Fig. 1. Represents the upper portion of the floriferous leaf, supporting the spadix of flowers.

2. The root.

(Of the size of nature.)

3. A stamen.

4. A flower.

5. The stigma and germ.

(Magnified.)







Drawn from Nature by W. P. C. Barton

Printed by J. H. Smith, N. York

SPIGELIA MARILANDICA.

( Carolina Pick-root. )

## SPIGELIA MARILANDICA.

### CAROLINA PINK-ROOT.

Indian Pink. Pink-root. Worm-grass. Carolina Pink. Unsteetla, of the Cherokee Indians.

*Germ.* Nordamerikanische Spigelic. (Willd.)

**SPIGELIA** Marilandica. Syst. Veg. 166. Hope. Act. Edin. 3. ann. 1771. p. 151. t. 1. Curt. Mag. 202. L. Sp. Pl. 2. p. 249. Gron. Virg. 142. Rai. Dendr. 32. Catesb. Car. 2. p. 78. t. 78. Houttuyn Lin. Pfl. Syst. 5. p. 502. Curt. Bot. Mag. 1. t. 80. Woodville Med. Bot. 2. 288. t. 105. Walt. Fl. Car. 92. Mich. Fl. Bore. Am. 1. 147. Pursh, Fl. Am. 1. 139. Elliot, Sketch. 1. 236. Gron. Virg. 30. Chalmers, Diseases S. Car. 1. 67. Pharm. Edin. Bart. 39, repr. in Phys. Jour. viii. 428. Lew. Disp. by Dunc. 317. Murr. J. 1. 378. Home, F. Clin. 420. Rush, 1. 185. Schoepf, 21. Monroe, iii. 270. Pharm. Lond. Berg. 94. Lew. ii. 377. Vog. 216. Garden in Phys. Ess. iii. 145. Graing. 28. Lining in Phys. Ess. 1. 436. Stok. Bot. Mat. Med. 1. 309. Big. Med. Bot. 1. 146. Willd. Sp. Pl. tom. 1. par. ii. p. 825. Thacher's Disp. 3d. ed. 362. Coxe's Disp. 3d. ed. 568. Pharm. Mass. Med. Soc. 30. Barton's Collections, 3d. ed. par. 1. 38, 39. 61. Dyck. Edin. Disp. 383. Nutt. Gen. Am. Pl. ii. 134.

## SPIGELIA.

Gen. Pl. ed. Schreb. n. 272.

Nat. Syst. Juss. *Gentianae*. Classis VIII. Ordo XIII.Nat. Ord. Lin. *Stellatae*,  $\beta$ .Artificial Syst. Lin. Classis *Pentandria*. Ordo *Monogynia*.*Cor.* infundibulif. *Caps.* didyma, 1-locularis, polysperma.

**SPIGELIA**, L.\* *Arapabaca*, Pl.\* Calix 5-partitus Corolla infundibuliformis, limbo patens 5-fida æqualis. Stamina 5. Germen didymum; stylus 1; stigma 1. Capsula didyma 2-locularis quasi 2-cocca, 4-valvis polysperma seminibus angulo loculorum interiori affixis. Herbæ; folia opposita (floralia in *S. Anthelmiâ* 4-verticillata;) flores terminales bracteolati spicati aut cymosi, in spicis secundi.

Juss. Gen. Plant. ed. 1789. p. 143.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, deeply five-cleft, pointed, small, permanent. *Cor.* of one petal, funnel-shaped; tube much longer than the calix, narrowed towards the base; limb spreading, cloven into five broad pointed segments. *Stam.* Filaments five, simple; anthers simple. *Pist.* Germen superior, composed of two globes; style solitary, awl-shaped, the length of the tube; stigma simple. *Peric.* Capsule two-lobed, of two cells, and four valves. *Seeds* numerous, very minute.

Ess. Ch. Corolla funnel-shaped. Capsule of two globular cells, with many seeds.

**SPIGELIA Marilandica**: caule tetragono, foliis omnibus oppositis. Willd.

Stem four-sided, leaves all opposite.

## SYNONYMA.

**SPIGELIA oppositifolia.** Stokes.

**SPIGELIA Americana.** Monro.



LONICERA Marilandica spicis terminalibus, &c. Sp. Pl. 2. p. 249. Gron. Virg. 142.

PERICLYMENI Virginiani flore coccineo, &c. Rai. dendr. 32.

PHARM.

*Off.* The root.

RADIX Spigeliæ Marilandicæ. Edin.

SPIGELIÆ Radix. Lon. Dub.

DESCRIPTIO UBERIOR.

*Radix perennis. Caules simplices, erecti, scabri, quadrangulares, rigidi, annui. Folia opposita, sessilia, ovato-lanceolata, integerrima, glabra, patentia. Spica solitaria secunda. Bracteis parvulis oppositis. Calix pentaphyllus: foliolis subulatis, persistentibus. Corolla superne 5-angulata, fauce gibba, basi dilatata: Limbus 5-partitus: laciniis lanceolatis revolutis. Stamina 5, corolla breviora. Antheræ sagittatæ, conniventes. Germen superum. Stylus teres, inferne articulatus parte superiore decidua. Stigma attenuatum. Capsula subrotunda, didyma: loculis bivalvibus. Semina plurima, angulata, scabra. (Willd.)*

To a celebrated professor of anatomy and surgery at Padua, Dr. Adrian Spigelius, the genus, of which a species is now to be particularly described, was dedicated by Linnæus. Spigelius was a distinguished botanist\* in his day, in consequence of which he was thus

\* Dr. Spigelius was a profound anatomist and distinguished surgeon. He was born at Brussels in 1578, and died professor of three branches at Padua, whither his fame



honoured by the learned Swede. Of this genus there are two other species besides the *Marilandica*, and which are natives of Brazil and Cayenne.

*Spigelia Marilandica* is a herbaceous plant, from six to twenty inches high; it has a perennial root, consisting of a multitude of slender fibres, forming together a large bunch, as represented in the plate (Fig. 2.) They are of a yellow colour when recently removed from the ground, and become black when dried. From the root proceed several four-sided, smooth stems of a purplish colour, garnished with two or three small leaves, which are usually of a faded green or brown colour. The leaves are few, sessile and opposite, ovate, acuminate, entire and glabrous, except on the margins and the veins, where they are pubescent. The flowers are borne on a terminal racemous spike, which leans towards one side, and supports from four to twelve flowers, situated on short peduncles. The corolla is funnel-shaped, contracted at the top, and divided into five acute segments. It is of a beautiful carmine colour externally, except towards the base, where it is blended into white; and of an orange-yellow within. The edges of the corolla segments are slight-

had caused him to be invited, in 1625. The works he published are as follow: "*Isagoges in Rem. Herbariam Libri duo.*" "*De Lumbrico lato Liber, cum notis et ejusdem Lumbrici icone.*" "*De incerto tempore Purtus.*" "*De Semitertiana Libri quatuor.*" "*De Humani Corporis Fabrica Libri, cum Tabulis 98 ære incisis.*" "*De formato Fœtu liber singularis, æneis figuris ornatus.*" "*Tractus de Arthritide.*"

ly tinged with green, which is sufficiently conspicuous when they are reflected. Only one or two of the flowers are expanded at once. The calix consists of five long and narrow leaves, which are a little serrated on the margin; it is permanent, and has the segments reflected when the fruit is mature. The stamens appear to be short and inserted into the corolla towards the upper part: but in all the specimens I have examined, they may be said to have been adnate, and the length of the tube, as represented in Fig. 5. for the filaments could be distinctly traced down to the base of the tube, and easily detached. The anthers are oblong and narrow. Germen superior, ovate; style the length of the corolla, terminated by a long fringed stigma, projecting beyond it a quarter of an inch. The capsule is double, two-celled, and contains many seeds.

This plant is a native of the southern states, where it is abundant. It was formerly found wild near Baltimore, but has been extirpated. Even in Virginia it is rare, and does not grow wild in any state north of it. It is, however, cultivated abundantly in some of our gardens, particularly at Kingsess, where it thrives luxuriantly. From living specimens obtained thence, I made the drawing, from which the plate has been engraved. It grows in rich, dry soils, on the borders of woods, and its time of flowering, according to Mr. Elliot, is from May to July.

## MEDICINAL PROPERTIES.

Carolina pink-root is a medicine of high reputation as a vermifuge. It is said this property was learned from the Cherokee Indians; but it was first brought into notice among physicians by Drs. Garden, Lining, and Chalmers, who have all spoken in strong terms of its anthelmintic virtue. It also acts powerfully as a cathartic, but this effect is uncertain, and only follows large doses. As the plant contains no resin, it yields its principal medicinal virtues to water. It is accordingly given, most frequently, in infusion and decoction. The root is supposed to be more powerful than the plant; but the usual practice is to employ the whole herb in hot infusion or decoction. When given in substance, the powdered root alone is administered. Dr. Garden discovered that the recent plant was most active, and that when the root became old, it was very considerably impaired. This circumstance should be borne in mind, whenever it is necessary to employ the plant in medicine; and when it is known to be old, to make a proportionate allowance for the deterioration. The pink-root occasionally induces violent narcotic effects, such as dimness of sight, giddiness, dilated pupil, spasmodic motions in the muscles of the eyes, and even convulsions. Indeed, Dr. Chalmers attributes the loss of two children, who died



in convulsions, to this article. Dr. H. Thompson found large doses of the root, to produce in his own system, acceleration of the pulse, flushed face, drowsiness, and stiffness of the eye-lids. Notwithstanding these narcotic effects, which have undoubtedly followed the use of the plant, it is said that no danger need reasonably be apprehended from them: and some eminent physicians even assert, that they merely indicate the favourable operation of the medicine.

The use of pink-root has not been confined to cases of worms. Dr. Garden mentioned, in the first letter to Dr. Hope, which was written about the year 1763, that "its purgative quality naturally led him to give it in febrile diseases, which seemed to arise from viscidities of the *primæ viæ*; and in these cases it succeeded to admiration, even when the sick did not void worms." According to Dr. Garden, the pink-root never does much good, except when it operates gently as a purgative. Hence it has become a common practice to unite calomel or rhubarb with it, in order to ensure the cathartic effect, which has already been said to be very uncertain. He recommended that a vomit should be given previously to the administration of the pink-root; and this practice is often adopted; and almost universally, a mercurial cathartic is given after the pink-root. The late Professor Barton recommends this medicine in the protracted remitting fever of infants, which is supposed to lay the foundation of hydrocephalus. Garden, and others, since his time, have combined the *Aristolochia serpentaria* with this plant,



and it is said, with the effect of counteracting the narcotic power of the pink-root. Professor Bergelius\* has known instances of convulsions cured by *Spigelia*, without the expulsion of worms; and Dr. Barton informs us,† that an extensive use of the plant convinced him it often affords relief in supposed cases of worms, but in which none were discharged.

An opinion formerly prevailed that the poisonous effects of *Spigelia* were not produced by that plant, but by the roots of another, which was accidentally gathered with it. This idea is not, at this time, entertained; and the small black fibres which are found among the roots of the *spigelia*, and which were supposed to belong to the deleterious plant, are now known to be nothing else than the decayed roots of the *spigelia*, from the preceding year, and which, according to Mr. Elliot, are particularly visible in the spring, at which time the pink-root is gathered.

The *spigelia* is somewhat mucilaginous, and is sweetish or insipid to the taste. It is therefore readily taken by children. The dose is, of the dried pulverized root, about fifteen grains or a scruple for a child between six and eight years of age, and half that quantity for an infant under six years. To an adult a drachm or two drachms

\* *Essays and Observations, Physical and Literary*, vol. iii. art. x. p. 149.

† *Collections*.

may safely be given. The common mode of administering the infusion is in the proportion of an ounce of the root and plant to a pound of boiling water, of which from one to three table spoonsful may be given to a child, and about half a pint to an adult. If no effect follows, the doses may be augmented.

TABLE XXXI.

Fig. 1. Represents a flowering branch of the *Spigelia Marilandica*, of its natural size:

2. The lower parts of the stems, with the tuft of fascicled roots.
3. The calix.
4. The pistil.
5. The corolla opened.









Drawn from Nature by W. L. Barton

ASARUM CANADENSE.  
(Wild Ginger.)

Painted by Valleron & Co. New York

## ASARUM CANADENSE.

### WILD GINGER.

Indian Ginger. Colts-foot. Canada Snake-root. American Asarabacca. Kidney-leaved Asarabacca.

*Germ.* Canadische Haselwurz. (*Willd.*)

**ASARUM** Canadense. *L. Sp. Pl.* 633. *Hort. Kew.* 1. 124. *Sal. R. Hort.* 344. *Gron. Virg.* 72. *Corn.* 24. t. 25. *Park. theatr.* 266. *Hist. Ox. s.* 13. t. 7. f. 4. *Bart. Collect.* 26. 48. ed. 3d. par. 1. p. 24. 27. *Big. Med. Bot.* 1. p. 150. *Coxe's Disp.* 3d. ed. 213. *Dyck. Ed. Disp.* 195. 411. *Schoepf*, 72. *Mich. Fl. Am. Bor.* 1. 279. *Pursh, Fl. Am.* ii. p. 596. *Bart. Prod. Fl. Ph.* 53. *Comp. Fl. Ph.* ii. 146. *Muhl. Cat.* 47. *Nutt. Gen. Am. Pl.* ii. 200. *Willd. Sp. Pl. tom. ii. par. ii. p.* 838. *Mill. Dict. n. 2. et Illustr. Syst. Thunb. Jap.* 190. *Salisb. Prod. Chap. Allert.* 344. *Gron. Virg.* 52. *Corn. Canad.* 24. t. 25. *Houttuyn. Lin. Pfl. Syst.* 7. p. 3. *Walt. Fl. Car.* 143.

### ASARUM.

*Gen. Pl. ed. Schreb. n.* 801.

*Nat. Syst. Juss. Aristolochiae. Juss.*

*Nat. Ord. Sarmenataceae. Lin.*

Art. Syst. Lin. Classis *Gynandria*. Ordo *Dodecandria*.

ASARUM, T. L.\* *Asaret, Cabaret*. Calix urceolatus 3-fidus. *Stamina* 12 brevia, germini imposita; antheræ mediis filamentis adnatæ. *Stylus* brevis; stigma stellatum 6-partitum. *Capsula* 6-locularis. *Radix* tuberosa emittens cauliculos 2-phyllous, in foliorum dichotomiâ 1-floros. Juss. Gen. Pl. ed. 1789. p. 73.

Gen. Ch. *Cal.* Perianth one-leafed, bell-shaped, three or four cleft, coriaceous, coloured, permanent; clefts erect, bent in the apex. *Cor.* none. *Stam.* Filaments twelve, subulate, half the length of the calix; anthers oblong, fastened to the middle partition of the filaments. *Pist.* Germ. inferior or concealed within the calix; style cylindric, the length of the stamens; stigma stellate, 6-parted. *Per.* Capsule coriaceous, usually six-celled. *Seeds* several, ovate.

Ess. Gen. Ch. *Cal.* Three or four cleft, placed on the germ. *Cor.* none. *Capsule* coriaceous, crowned. *Stigma* six-cleft. Ency.

ASARUM Canadense; A. foliis lato-reniformibus geminatis, calice lanato, profunde tripartito, laciniis sub-lanceolatis reflexis. Mich., Willd., and Pursh.

A pair of broad-reniform leaves; calix woolly, deeply three-parted; segments sub-lanceolate, reflexed.

#### SYNONYMA.

ASARUM latifolium. Salisb.

ASARUM foliis sub-cordatis petiolatis. Gron.

ASARUM Carolinianum. Walt.

#### PHARM.

ASARI Canadensis, *Radix et Herba*.

#### DESCRIPTIO UBERIOR.

FOLIA utrinque minutissime pubescentia. Germen obsolete trigonum. Calix foliolis inferne incurvis cavis, superne plus minus patentibus, planiusculis, marginibus revolutis. Filamenta vix altitudinem stigmatum. Willd.



THE root of wild-ginger is long, creeping, horizontal, jointed, fleshy, and of a light yellowish colour, sending off radicles of the same hue. It smells powerfully aromatic, and is exceedingly grateful. The stems are very short, bifoliate, and bear a single drooping flower, in the fork formed by the junction of the two petioles. These petioles are from six to ten inches long, round, woolly, greenish above, and flesh-coloured below. The leaves are broad, kidney-shaped, pubescent above and below, have strong prominent veins which give the under part a bullated appearance. They are of a rich, shining light-green above; and pale, almost bluish underneath. The calix is very woolly, and is divided into three broad, concave, acuminate segments, with the point reflexed. They are of a deep brown-purple colour at the inside, and of a dull purple, inclining to blue-green externally. I have however found many specimens in which both externally and internally the colour was fine purple. The stamens are clavate, of unequal length, inserted on the germ, and are generally about twelve in number. The anthers are adnate to the filaments close to the ends, a slender point of the filament projecting in each stamen beyond the anther. There are three nectarine filaments or perhaps abortive stamens, inserted near the lacinial divisions of the calix. The pistil consists of an inferior, irregularly hexagonal germ, and a conical deeply grooved style, (or perhaps six styles closely connected together,) crowned by six revolute stigmas. The flower is generally buried under the earth by its drooping uncurved hairy peduncle. The geographical range of the wild-ginger,



is from Canada to Carolina, and perhaps further south. It inhabits rich shady woods, and appears to delight in hilly places. The period of flowering is from April to May. This plant grows abundantly on the banks of the Schuylkill, above the falls on the west side, and on the Wissahickon creek.

#### MEDICINAL PROPERTIES.

Wild-ginger is nearly allied in its medical properties, to the *Aristolochia serpentaria*.\* The root possesses the same spicy and aromatic odour, as the root of that plant ; but the *Asarum* has it more powerfully, and it is not in this confined to the roots : the petioles, flowers and even leaves, being endued with the same grateful odour. The wild-ginger may deservedly be received into the *Materia Medica*, as a warm, grateful aromatic stimulant, acting on the skin, when taken in sufficiently large doses, with tolerable certainty, and as a powerful errhine, the latter property residing in the leaves. The emetic power† attributed to the expressed juice of the leaves is scarcely worth noticing, the dose that is necessary to produce the

\* Schoepf informs us that the *Asarum Virginicum*, (which is nearly allied to the *A. Canadense*) was formerly sold in England, for *Aristolochia serpentaria* ; and that the inhabitants of Carolina called it Heart snake-root.

† Barton's Collections.

emesis, being so copious, that it is doubtful whether the effect on the stomach is not produced by the quantity of crude indigestible matter. (For the Chemical Analysis, see Appendix.)

#### ÆCONOMICAL USES.

The roots steeped in fermented wine, produce a grateful drink ;\* and the dried pulverized root is commonly used in many parts of our country, as a substitute for ginger: hence the common name. Schoepf says the same epithet has been applied to the *Asarum Virginicum*.

\* *Asari Canadensis radices suaveolentes in petio vino fermentanti immersæ, liquoram gratiorem reddunt. Cornut.*

## TABLE XXXII.

Fig. 1. Represents a specimen of *Asarum Canadense* in flower, of its natural size.

2. The calix with the stamens and pistil brought into view.

3. A stamen.

4. The pistil.



Drawn from Nature by W.P. Norton

LAURI'S BENZOÏN.  
(Sapice-wod.)

Tanner Vallanor Kearny & Co. sc





## LAURUS BENZOIN.

### SPICE-WOOD.

Allspice-bush. Fever-bush. Wild Allspice. Spice-berry. Fever-wood.

*Germ.* Benzoin Lorbeer. (*Willd.*)

**LAURUS** benzoin. *L. Sp.* Pl. 530. *Hort. Cliff.* 154. *Gron. Virg.* 46. *Roy. Ludgb.* 226. *Fabric. Helmst.* 401. *Du Roi harbk.* 1. p. 354. *Mill. Dict. n.* 6. *Willd. Arb.* 165. *Wangh. Amer.* 87. *Comm. Hort.* 1. p. 189. t. 97. *Pluk. Alm.* 42. t. 139. f. 3. 4. *Houttuyn. Lin. Pfl. Syst.* 1. p. 534. *Pursh, Fl. Am. Sep.* i. p. 276. *Willd. Sp. Pl.* ii. p. 485. *Mich. Fl. Am. Bor.* i. p. 243. *Bart. Comp. Fl. Ph.* i. p. 192. *Bartram's Travels* 21. *Baylies in Med. Pap.* 47. *Stokes's Bot. Mat. Med.* vol. 2. p. 425. *Cutler,* 440. *Hort. Kew.* ii. 40. *Barton's Collec.* 3d. ed. par. 1. p. 20. par. 2. p. 52. *Bart. Prod. Fl. Ph.* 48. *Nutt. Gen. Am. Pl.* 1. 259. *Big. Florula Bost.* p. 97.

### LAURUS.

*Gen. Pl. ed. Schreb. n.* 388.

*Nat. Syst. Juss. Lauri. Classis VI. Ordo VI.*

*Nat. Ord. Lin. Holeraceae.*

*Artifi. Syst. Lin. Classis Enneandria. Ordo Monogynia.*

*Cal.* 0. *Cor.* calycina, 6-partita. *Nectarium* glandulis tribus, bisetis, germen cingentibus. *Filamenta* interiora glandulifera. *Drupa* 1-sperma.

**LAURUS, T. L.\*** *Laurier*. Calix 6-partitus aut 6-fidus æqualis. Staminum filamenta 12, 6 exteriora fertilia, 6 interiora exterioribus opposita quorum 3 fertilia basi 2-appendiculata aut 2-glandulosa et 3 alterna sterilia. Stigma capitatum. Folia plerumque integra, in paucis subopposita; flores in plurimis subpaniculati axillares aut terminales, in paucis solitarii aut glomerati axillares, quandoque sexibus abortivis dioici. Calix quorundam deciduus, cæterorum persistens cupulæformis integer aut lobatus. Drupa in plurimis Olivæ aut Ceraso similis, in *L. Perseâ* pyriformis magna. Ex Linneæo stamina quorundam numero varia, 6-8 in *L. Sassafras*, 8-14 calice 4-fido in *L. Nobili*, &c. Confer in vivis. An genus dividendum? Juss. Gen. Plant. ed. 1789. p. 80.

**Gen. Ch.** *Cal.* none, unless the corolla be taken for such. *Cor.* in six deep, ovate, pointed, concave, erect, alternately external segments. Nectary consisting of three-pointed coloured tubercles, each terminating in two bristles, surrounding the germen. *Stam.* Filaments nine, shorter than the corolla, compressed, obtuse, three in each row; anthers attached to the edges of each filament, in the upper part, at each side. There are two globular glands, on a very short stalk, attached to every filament of the innermost row, near its base. *Pist.* Germen superior, nearly ovate; style simple, of equal thickness throughout, the length of the stamens; stigma obtuse, oblique. *Peric.* Drupa oval, pointed, of one cell, contained within the corolla. *Seed.* Nut ovate, pointed, with a kernel of the same shape. Ency.

**LAURUS** benzoin; ramis virgatis sub floratione aphyllis, foliis deciduis, cuneato-ovalibus, subtus albicantibus subpubescentibus, floribus glomerato-umbellatis, gemmis pedicellisque glabris.—Willd. and Pursh.

Leaves ovate, lanceolate, pubescent underneath; flowers in clustered umbels; buds and pedicels glabrous. Bart. Comp. Fl. Ph.

#### SYNONYMA.

**LAURUS** pseudo benzoin. Mich.

**LAURUS** æstivalis. Wagh.

ARBOR Virginiana citreæ vel limonii folio, benzoinum fundens. Comm. Hort.

ARBOR Virginiana, pishaminis folio baccata benzoinum redolens. Pluk.

LAURUS, sub genus, *Euosmos benzoin*. Nutt.

#### PHARM.

LAURI benz. *Cortex et bacca*. The bark and berries.

THE term *Laurus* was the ancient name for the bay-tree, and it is now continued, not only to designate that tree, but is applied to a genus, comprising in common with it, a great number of fine aromatic shrubs and arborescent vegetables.

The *laurus benzoin* is one of these, and it is, without doubt, one of the finest aromatic shrubs of our country. It is polygamous, and rises to the height of from four to ten feet, and is very bushy. The stems are of an ash colour, often spotted with white dots. The flowers appear early in April or the last of March, long before the leaves put out. About the first week of April the leaves are about as far advanced as represented in Fig. 1, of the plate. They afterwards become the size of those represented in Figs. 2, and 3. They are cuneate-oboval, nearly pubescent beneath, and always paler than above.

The greenish-yellow flowers appear in small umbels, containing each from two to four flowers; the pedicels in these umbels are



smooth. The calix is hexaphyllous; the leaflets oblong, thin, costate, with globular olearia. There are generally nine stamens, which have two of the three outer filaments simple, the third with a pedunculate gland at the base; the three at the base of the three other leaflets, with two pedunculate glands at the base; the three inner with glands at the base; pistil terete and attenuate. The flowers are succeeded by shining, oval, scarlet or crimson berries, which are ripe in the last of September. They possess an aromatic and grateful taste, and according to Dr. Drake, are used for medicinal purposes. The spice-wood inhabits low and moist places, and damp shady woods. It is partial to the borders of streams and rivulets, and in such places seems to thrive better than elsewhere. It is found from the most northerly state of our union to Florida; and is every where well-known by one or other of the vulgar names at the head of this chapter.

#### MEDICINAL PROPERTIES.

The medical virtues of spice-wood, are not inconsiderable. The bark is highly aromatic, stimulant and tonic, and is extensively used in the country, I have been informed, with much success, in intermittent fevers. It is given generally in decoction, but not unfrequently in powder. The late Dr. Barton informs us, that a watery infusion of the twigs has often been given to children with a view to

dislodge worms, and that it is deemed an efficacious medicine in such cases. Of this I know nothing myself; but as the tea made by infusing the young branches is very pleasant, it would certainly be well to try it as a vermifuge. The Indians are said to esteem the spice-wood highly as a medicine; in what complaints they use it I have not been able satisfactorily to learn. Dr. Drake\* mentions that the oil of the berries is used medicinally, and that it is stimulant. The dose of the infusion or decoction is about a pint in twenty-four hours. When the powdered bark is used, one drachm is given two or three times a day, in a glass of wine. I have known the flowers used for making tea, in the manner that sassafras blossoms are, and taken as a gentle refreshing stimulant.

#### ÆCONOMICAL USE.

The berries partake of the same spicy flavour which distinguishes the bark of the shrub; and we are informed, that during the late American war, the inhabitants of the United States used them dried and powdered as a substitute for allspice.†

\* Picture of Cincinnati.

† Barton's Collections.

## TABLE XXXIII.

Fig. 1. Represents a flowering twig of the *Laurus benzoin*, with the leaves just coming out. The earliest flowers appear before there are any leaves on the shrub.

2. A specimen of the plant in fruit, culled on the tenth of September.

3. An outline of one of the largest leaves.

4. A group of flowers with the four bractes.

5. An expanded flower separated.

6. A seed.





Fig 1.



Drawn from Nature by W P C Barton.

Tanvet Galland Hénry & Co N.

*COPTIS TRIFOLIA.*  
(Gold Thread.)

## COPTIS TRIFOLIA.

### GOLD-THREAD.

Mouth-root.

*Germ.* Kleinste Christwurz. (*Willd.*)

**COPTIS** trifolia. *Lin. Sp. Pl.* 784. *Am. Acad.* v. 2. p. 356. t. 4. f. 18. *Mich. Fl. Bo-reali-Amer.* 1. 325. *Pursh, Fl. Am. Sep.* ii. 390. *Salisb. in Linn. Trans.* viii. 305. *Sp. Pl. Willd.* ii. 1335. *Kalm's Travels*, iii. 379. *Big. Med. Bot.* 1. p. 64. *Lepech. Iter.* 1. 190. *Æder. Fl. Dan.* t. 566. *Pallas, Iter.* iii. 34. *Big. Florula Bost.* p. 134. *Thach. Disp.* 3d. ed. p. 235. *Cutler, Amer. Acad.* 1. 457. *Dyck. Ed. Disp.* 249.

### COPTIS.

Salisbury.

*Nat. Syst. Juss. Ranunculaceae.*

*Nat. Ord. Linn. Multisiliquae.*

*Art. Syst. Lin. Classis Polyandria. Ordo Monogynia.*

*Calix* none. Petals five or six, caducous ; nectaries five or six, cucullate ; capsules from five to eight, pedicelled, beaked, many-seeded.

**COPTIS** trifolia ; leaves ternate, scape one-flowered.

## SYNONYMA.

ANEMONE Grönlandica. Fl. Dan. T. DLXVI.

HELLEBORUS trifolius. L. and others.

HELLEBORUS scapo unifloro. Am. Acad.

NIGELLA. Cutler.

## PHARM.

*COPTIS trifolia. Radix.* The root.

## DESCRIPTIO UBERIOR.

**RADIX** fibrosa, filiformis, repens, perennis. *Folia* radicalia ternata; foliolis sessilibus, obverse ovatis, extrorsum magis gibbis, argute serratis, rigidiusculis, glabris, venosis. *Petioles* filiformes, folio longiores. *Scapus* solitarius, filiformis, petiolis duplo longior, instructus bractea subovata. *Flos* solitarius, magnitudine floris Trientalis. *Corollae* petala quinque, ovata, basi in unguem attenuata, alba, striata. *Nectaria* petalis saepius plura, lutea, limbo ovata, basi attenuata in cylindrum perforatum, petalis dimidio breviora. *Staminum* filamenta capillaria, alba, plurima, nectariis vix longiora. *Antherae* albæ, subrotundæ, erectæ. *Pistilli* germina quinque compressa. *Styli* filiformes, longitudine staminum, recurvi. *Stigmata* obtusa. *Pericarpium* capsulis quinque, acuminatis, compressis, cœadunatis margine interiore. *Semina* plurima. Minima est hæc planta in suo genere, attamen spectabilis; inter Flores Sibiriae speciosos et maxime singulares est, et jam quædam *Fumaria* bulbosis affinis, floribus condecorata in suo genere maximis.

Amœn. Acad. p. 355.

THIS pretty little evergreen plant, was referred by all botanists to the genus helleborus, until Mr. Salisbury separated it, on the characters which are given above. He associated it with another plant, having twice ternate leaves and green flowers, found by Mr. Menzies on the north-west coast of America. To the genus he gave the name of *coptis*, from *κοπῆω*, to cut; and botanists now universally adopt his name and generic characters. The species which is the subject of this chapter, is a native of Siberia, Iceland, Labrador, and the northern parts of the United States.

The roots are perennial, about the size of bobbin, creeping, fascicled, and of a bright-yellow colour, which gives them the name of gold-thread. The stems are slender, round, and proceed from sheathing, ovate, sharp-pointed squamous sheaths. The leaves are ternate, coriaceous, smooth, and of a deep, shining evergreen, conspicuously and delicately veined. They are supported by long and short, round, slender petioles. The folioles are cuneate-obovate, with acuminate crenatures on the margin. The scapes are one-flowered, slender, terete, and garnished, with a mucronate scale-like bract at some distance below the flower. The corolla consists of from five to seven oblong, greenish-white, concave petals. There are five or six clavate fistulous nectaries, which are tinged with yellow at the top. The stamens are numerous, consisting of delicate white filaments and globose anthers. Germs oblong, flattened. The capsules are oblong, rostrate, and pedicellate, containing many seeds



attached obliquely across their sides, to the inside. This little alpine evergreen is restricted to Canada and some of our most northerly states.\* It is found in sphagnous swamps, and in cold situations most abundantly, flowering in the month of May.

#### MEDICINAL PROPERTIES.

The root of gold-thread is a pure and powerful bitter, devoid of any thing like astringency, and yielding its virtues readily to watery menstrea, though its bitterness is equally well given out to spirit. It is used in both ways, in the New England states, where, according to Dr. Thacher, it has long been a popular remedy for apthous affections of the mouth in children; and the doctor says, "experience has evinced its beneficial effects." He informs us, also, that it is considerably employed as a stomachic bitter in debility of the stomach and loss of appetite. Professor Bigelow states, that larger quantities of this article are sold in the druggists' shops of Boston, than of almost any other indigenous production; and that the demand arises from its reputed efficacy as a local application in apthous and other ulcerations of the mouth. He thinks, however, that its reputation in these cases is

\* My specimens were brought to me from New England, in 1814, by a physician of this city, and a large quantity of the root, which had belonged to the late Professor Barton, fell into my hands after his death.

wholly unmerited, and attributes the benefit which has attended its use, to other stimulating and astringent articles which have been combined with it. I have had no further experience with this plant, than simply in a few trials to ascertain its tonic and stomachic virtues ; and in these, the results fully confirmed the promise which the sensible properties of the root held out. It is one of the purest bitters I am acquainted with, and though not so intense as quassia, is somewhat similar to it. It may be safely recommended for its tonic and bitter powers.

## TABLE XXXIV.

Fig. 1. *Coptis trifolia*, of its natural size, in flower, and with the last year's fruit on.

2. A petal.

3. A pistil.

4. A nectary.

5. Stamen.

6. Capsule opened, shewing the seeds.

7. The entire capsule, (still more magnified.)

} All greatly magnified.

N. B. The organs of the plant as above, viz. Figs. 3, 4, and 5, are copied from the Fl. Dan., my specimens not being sufficient to enable me to draw them from the American plant.







Drawn from Nature by W. L. Barton

Tanner, Vallance, Kearns, & Co. St.

FRASERA WALTERI.  
(American Columbo.)

## FRASERA WALTERI.

### AMERICAN COLUMBO. COLUMBO.

Columbia. Indian Lettuce. Columbo-root. Marietta Columbo. Wild Columbo.

FRASERA Walteri. Walter, Fl. Car. 88. Mich. Fl. Bor. Am. 1. p. 96. Pursh, Fl. Am. Sep. 1. p. 101. Drake's Pict. Cin. p. 85. Nutt. Gen. Am. Pl. 1. p. 102. Bart. Collec. ed. 3d. par. 2. p. 16. Bart. Fl. Virg. 49. Gmelin, Syst. Nat. ii. p. 215. 256. Persoon, Syn. Plant. 1. p. 137. Bartram's Travels, p. 42. Med. Rep. New York, vol. 15. Elliot. Sket. vol. 1. p. 205.

### FRASERA.

Walter. Michaux.

Nat. Syst. Juss. *Gentianae*.

Artific. Syst. Lin. Classis *Tetrandria*. Ordo *Monogynia*.

*Cal.* profunde 4-partitus, patens, laciniis lanceolatis, acutis. *Cor.* calyce multo major, profundissime 4-partita, patens : laciniis ovalibus, ob utrumque marginem versus summitatem incumbenti-inflexum quasi acuminatis. Glandula conspicua,

orbiculata, convexo-protuberans et eleganter barbata in parte laciniarum media. *Stam.* 4, corolla breviora eique alterna, filamenta subulata; antheræ subovato-oblongæ, inferne subsemibifidæ, demum reflexæ. *Pist.* ovarium oblongo-ovatum, compressum, sensim desinens in stylum ipsius circiter longitudine: stigmata 2, crassa, glandulosa, divergentia. *Caps.* majuscula, ovalis, valde compressa, ambitu submarginata, subcartilaginea, rudimento styli mucronata; 1-ocularis, margine 2-valvis. *Semina* pauca, (8-12) elliptica, plano-compressa, membranaceo-marginata; ad latera utriusque suturæ immediate longitudinaliter per marginem alterum ita adnexa, ut sibi invicem imbricatim incumbant.

*Obs.* Genus gentianeum; fructu fere *MENYANTHIS Nymphoidis*.

Mich. Flor. Boreali-Amer. p. 96.

*Calix* deeply 4-parted. *Corolla* 4-parted, spreading; segments oval, with a bearded orbicular gland in the middle of each. *Capsule* compressed, partly marginated, 1-celled. *Seeds* few, (8 to 12) imbricated, large, elliptic, with a membranaceous margin.

#### SYNONYMA.

*FRASERA Carolinensis.* Walter.

*FRASERA officinalis.* Bart. Fl. Virg.

*FRASERA verticillata.* Drake, and others.

#### PHARM.

*FRASERÆ Walteri. Radix.* The root.



THE superb plant which is the subject of this chapter, was dedicated by Walter to Mr. John Fraser,\* and is the only species of the genus known at present. The root is biennial, large, tuberous and fleshy, and of a yellow colour. The stalk is strong, succulent, and fleshy, from eight to ten feet high, nearly square and furrowed, sending of whorls of large, deep-green glabrous leaves, at intervals of six or eight inches, to about half its length, and smaller leaves and flowering branches in whorls to the top. "The lower leaves are oblong, lanceolate, entire, membranous, delicately veined, from six to eight inches long, and from two to three wide; upper leaves narrow, lanceolate, small."†

The leaves according to Pursh, Mr. Elliot, and the late Dr. Barton,‡ are occasionally opposite. They generally grow to the number of four or eight together, are lanceolate or sometimes oblong, ovate, and acute. The flowers are aggregated in clusters; the segments of the corolla are lanceolate, greenish-yellow, or cream-white, finely speckled with purple, and having a pubescent or ciliated oval gland in the middle of each petal, which is green internally, and brown on the edges. Those glands are conspicuous on both sides of the petals, as represented in the front and back views of the

\* An indefatigable nursery and seedsman, to whose exertions the gardens of England, and particularly of London, are indebted for many rare American plants.

† Elliot. ‡ Flora Virg.



two expanded flowers in the plate. The peduncles are from one to three inches long, one-flowered; calacine segments lanceolate, shorter than the corolla. Filaments four, shorter than the corolla, attached to the base, and alternating with the segments of the corolla. Anthers oblong, incumbent. Germ superior, ovate, tapering above. Style only the attenuated germ, bifid. Stigmas two, diverging. The capsules are compressed, somewhat margined, one-celled, and contain about eight or twelve diaphanous flat seeds, with a membranaceous margin, and are imbricately attached to the attenuate margins of the capsule. These capsules (in the dried specimens) are of the colour represented in the plate, (Fig. 2.) The habitat of this plant is variously described by different botanists. Michaux, it appears, has observed it in wet or swampy places "in Paludosis Carolinæ." Pursh says it is found "in the swamps of Lower Carolina, and on the borders of the lakes of Pennsylvania and New York." Mr. Nuttall says, "in the *dry and open woods* of western Pennsylvania, and New York, in certain localities it is abundant:" and Dr. William Short, in a letter\* to me, says it grows in the barrens or prairies of

\* The following is an extract from the letter of this gentleman, which will, I am sure, be interesting in this place. "The flowers of the *Frasera* are by no means showy at a distance, but exquisitely delicate upon minute examination.

"The Columbo, for so it is universally denominated here, grows abundantly in the country in which I reside, particularly those portions of it called barrens or prairies, where, from the annual passage of fires over them, the forest growth is stunted and sparse, but affording in the summer, rank and luxuriant growths of annual plants, and

Kentucky. The late Dr. Barton observed it in 1797, growing in great abundance, on the west side of the Jenisseia river, in the state of New York. It is said to be common in some parts of Upper Canada; but the states of Kentucky, and Tennessee, yield it in profusion. From the abundance which grows in the neighbourhood of Marietta, in Ohio, it has received the name of Marietta Columbo. According to Walter, Michaux, Mr. William Bartram, and Mr. Elliot, it grows in Carolina and Georgia. The latter gentleman mentions that it has been found in Fairfield district, and in Abbeville.

The credit of the discovery of this fine and interesting plant, seems to be due to Mr. William Bartram,\* of Kingsess gardens. He

some shrubs. Here among the hazle, and different species of Sumac, the *Frasera* rears its conical head in all its grandeur, frequently attaining the height of eight and ten feet—in other parts of the country, not so particularly congenial to its growth, I have seen it of much smaller size.”

\* Mr. Bartram is still living, though aged and infirm. He resides at Kingsess gardens, where he hallows by his venerable appearance, and graces by his instructive converse and simple manners, the seat founded and supported by his family. He is one of the most unambitious lovers of nature I have ever seen. With a mind keen, penetrating and vivacious, he applied himself in early life, to the study of botany, and indeed natural history generally; but more particularly devoted himself to the study of the manners and habits of our birds, and other interesting points of inquiry connected with their history and migrations. In his travels into Florida, he relates these in all the fervour of a real lover of nature's works, and with such innocent enthusiasm, that we cannot fail to love and venerate the author. He ranks as a botanist in a very high grade. All his observations have been communicated to others, for the good of

describes it under the name of Indian Lettuce.\* The time of flowering of the columbo, is in May, June, and July.

From a variation in the number of parts of the flower and other circumstances, it is asserted by the editor of the article *Frasera*, in Rees's Encyclopædia, to be the *Swertia difformis*, of Linnæus; and Pursh remarks that the genus is so nearly allied to *Swertia*, that without seeing the fruit, the plant might readily be mistaken for a species of that genus. It is said by Dr. Barton,† that "flowers with five stamens are *very frequently* met with, and six stamens occasionally occur." In the specimens in my possession, for which I am indebted to Dr. Drake, of Cincinnati, the stamens are uniformly four.

#### CHEMICAL PROPERTIES.

The following is an account of the experiments made with the root by Dr. Daniel Drake, of Cincinnati, with a view to ascertain the comparative qualities of the *Frasera*, and the officinal columbo. "This root, (*F. Walteri*) gives out its bitterness both to aqueous and alcoholic menstrea, but more fully to the latter; the reverse of which is the

science; and to him, the late Professor Barton, Dr. Muhlenberg, Wilson, the ornithologist, and many others, have been largely indebted for much useful information.

\* See his Travels, p. 42.

† Fl. Virg.



case with the columbo. Its spirituous tincture suffers decomposition upon the addition of water, indicating that it contains resin, which the columbo does not, at least in any considerable quantity; and the addition of a decoction or tincture of galls to its watery or spirituous infusion, causes no precipitate of cinchonin, one of the chief constituents of columbo.”\* (For further chemical results, see Appendix.)

#### MEDICINAL PROPERTIES.

The root of *Frasera* is a pure, powerful and excellent bitter, destitute of aroma. It is said to be not at all inferior to the gentian or columbo of the shops, and is equal to any of the common tonic bitters used in medicine. In its recent state it is said to possess considerable emetic and cathartic powers.† I have been informed that it is extensively used in the western states, and that it supports its reputation wherever it is generally known. I have never used the plant in any way, and consequently can say nothing from experience on the subject. The late Professor Barton shewed me some slices of the dried root several years ago, but the quantity he possessed was not sufficient to enable him to make any extensive trials with it. It may be used in powder, decoction, infusion, and tincture.

\* Picture of *Cincinnati*.

† *Ibid.*



## TABLE XXXV.

Fig. 1. Represents a whorl of leaves, and a flowering branch of the *Frasera Walteri*.

2. The capsules.

3. A seed.

(All the size of nature.)

N. B. The drawing from which the plate was engraved, was made from good dried specimens, which I received from Dr. Drake ; the colouring of the flowers is imitated from a sketch made in a letter, by Dr. William Short, of Kentucky, in the faithfulness of whose pencil I have much reliance. The uncoloured whorl of leaves is an exact copy of Dr. Short's outline sketch, made with a pen.





Drawn from Nature by W. P. C. Barton

Engr. Johna Barry & Co. 1030

POLYGALA SENEKA.

(Seneca Snake-root.)

## POLYGALA SENEKA.

### SENEKA SNAKE-ROOT.

Rattlesnake-root. Senega Rattlesnake-root. Officinal Milk-wort, or Rattlesnake-root, in England.

*Germ.* Giftwiderstehende Polygala. (Willd.) Senegawurz. Klapper-schlangenwurz.

*French.* Polygale de Virginie; Senéka; Racine de serpent à sonnettes.

POLYGALA seneka. L. Sp. Pl. 990. Bot. Mag. t. 1051. Mill. Ph. Dict. ed. vii. t. 5. Repr. in ed. viii. at Art. Polygala. Hort. Kew. iii. 6. Walt. 178. Wood. Med. Bot. 253. t. 93. Thornt. 629. Gron. Virg. ed. 1. 80. L. Am. ii. 139. t. 2. at p. 141. f. 2. Pharm. Lond. Archer, account from, in Phys. Jour. i. 83. 106. Chir. Rev. vi. 194, and Underw. 1. 336. Bang. in Act. Haun. 1. 20. 111, 112. 257. Callisen, ib. 73. Chalm. ii. 115. Darw. ii. 392, and 398. Bree, 258. Cull. ii. 532. Lem. Duham. and Juss. account from, in Med. Ess. vi. 377. Spielm. 581. Geoffr. ii. 137. Haen. i. 357. Hill. 630. Lew. ii. 240. Pharm. Lond. Noviss. Mackenzie, in Med. Obs. ii. 288. Monro, iii. 257. Perciv. T. in Med. Jour. iv. 67. Repr. in Perciv. T. ii. 395. Und. 1. 338. Bang. in Act. Haun. 1. 239. 254, 255; ii. 41. 51. Berg. 595. Carth. ii. 435. Linn. 200. Murr. ii. 436. Ploucq. Bibl. 1. 661. Schoepf, 110. Vog. 226. Pharm. Edin. Stoke. Bot. Mat. Med. iii. 500. Bart. Collec. 3d. ed. par. 1. p.



26. 32. 34. 56. par. 2. p. 37. Cassel, account from, in Med. Rev. iv. 44. Lew. Disp. by Dunc. 284. Massie, account from, in Chir. Rev. xiv. 63. Murr. J. i. 331; ii. 46. Pears. R. i. 152. 230. 256. Arch. account from, in Ann. Med. iv. 511. and Med. Rev. iii. 426. Scot. J. ib. 313. Lew. Juss. and Bouvart, in Ac. Soc. abr. by Souther. iii. 297. Tenant. Disp. of Virginia, and account from, in Med. Ess. vi. 376. Graing. 66. Rush, v. 176. Dyck. Ed. Disp. p. 348. Coxe's Disp. 3d. ed. 500. Thach. Disp. 3d. ed. p. 319. Barton's Cull. ii. 370. 390. 411. Muhl. Cat. 66. Mich. Fl. Boreali-Am. ii. 53. Pursh, Fl. Am. Sep. ii. 464. Nutt. Gen. Am. Pl. ii. 87. Willd. Sp. Pl. 3. p. 894. Raj. Suppl. 640. Houttuyn. Lin. Pfl. Syst. 8. p. 490. Drake's Pict. Cin. p. 87. Chapman's Element. Ther. and Mat. Med. vol. 1. p. 270. Pharm. Mass. Med. Soc. 26.

## POLYGALA.

Gen. Pl. ed. Schreb. n. 1154.

Nat. Syst. Juss. *Pediculares*. Classis VIII. Ordo II.

Nat. Ord. Lin. *Lomentaceae*.

Artific. Syst. Lin. Classis *Diadelphia*. Ordo *Octandria*.

*Cal.* 5-phyllus; foliolis duobus alæformibus, coloratis. Legumen obcordatum, biloculare.

**POLYGALA**, T. L.\* *Calix* 5-partitus, laciniis 2-longè majoribus alæformibus sæpè coloratis. *Corolla* convoluta in tubum suprà fissum, limbo 2-labiatum, labio superiore 2-partito fisso, inferiore concavo subtùs barbato aut imberbi, intùs obtegente stamina 8 in duas fascies collecta; antheræ 1-loculares. *Stigma* subbifidum. *Capsula* compressa obcordata. *Herbæ* aut frutices; folia plerumque alterna; flores 1-3-bracteolati, alterni, laxè aut densè spicati, terminales. Fructus *P. spinosæ* baccatus et ramuli pungentes. *Calix P. Heisteriæ* 5-partitus æqualis, corolla non fissa, germen 4-corne.

Juss. Gen. Plant. ed. 1789. p. 99.

Gen. Ch. *Cal.* Perianth inferior, permanent, small, five unequal, ovate, acute leaves: two of them below the corolla; one above it; and two very large, flat, coloured, like wings, at the sides. *Cor.* imperfectly papilionaceous. Standard tubular, nearly cylindrical, short, its mouth reflexed, small, cloven. Keel concave, compressed, swelling towards the extremity, near to which are attached, for the most part, two feathery three-cleft appendages. *Stam.* Filaments eight, in two sets, both united, contained within the keel; anthers eight, simple. *Pist.* Germs oblong, superior; style simple, erect; stigma terminal, tumid, cloven. *Peric.* Capsule turbinate, somewhat heart-shaped, compressed, sharp-edged, with two cells and two valves, bursting on each side at the edges, the partition contrary to the valves. *Seeds* solitary, ovate, with a glandular scar. Ency.

POLYGALA Seneka; caulibus erectis simplicissimis foliosis, foliis alternis lanceolatis, spica terminali filiformi, floribus alternis. Willd. and Pursh.

Stems erect, quite simple, leafy; leaves alternate, lanceolate; spike terminal, slender; flowers alternate.

#### SYNONYMA.

PLANTULA Marilandica, caule non ramoso, &c. Raj.

POLYGALA floribus imberbis spicatis, &c. Gron.

POLYGALA Virginiana. Lem. Juss. and Bouvart.

SENEKA, of many medical writers, as quoted in the list of references.

RATTLESNAKE root of Tennant.

SENEGA Rattlesnake-root of Graing.

#### PHARM.

*Off.* The root.

RADIX Polygalæ Senegæ. Edin.

SENEGÆ Radix. Lond.

SENEKÆ Radix. Dub.

THIS humble plant is deservedly esteemed one of the first medicines in point of importance, native to our country. The genus to which it belongs is very extensive, containing more than one hundred species.\* It is an ancient name, compounded of two Greek words, πολυς, *much*, and γαλα, *milk*, in allusion to the reputation of the effect of the plant on cattle that feed on it. But at this time it is not known what is the precise plant supposed to be endued with such virtues. The root of *Polygala seneka* is irregularly shaped, contorted, gibbous, and ligneous; covered with a thick dull yellowish or greyish bark. Several stems arise from one root. They are leafy, slender, simple, erect, terete, of a dull brown purple colour below, and greenish towards the top; and are from ten to fourteen inches high. The leaves are alternate, lanceolate, acuminate, somewhat undulate, smooth, and supported on short petioles. Towards the base they are smaller, and inclined to ovate. The flowers are borne alternately on a slender terminal spike. They are papilionaceous, and though generally white, are often tinged with dull purple, and sometimes faint yellow. The calix consists of three short teeth, two inferior, and one superior, in relation to the corolla. Michaux and Pursh describe two distinct varieties, one of which they call *α. albida*; having lanceolate or oval leaves, with a somewhat crowded spike of

\* "Europe affords six, South and Tropical America as far as Buenos Ayres twenty-four, Barbary and the Levant four, Siberia two, Guinea two, the Cape of Good Hope produces twenty-four, many of them ornamental shrubs, India and China thirteen, one in Japan, one in Arabia Felix, and several others of uncertain locality." Nutt.



white sub-sessile flowers. The other  $\beta$ . *rosea*, which is either smoothish or pubescent; having linear leaves, a loose alternate-flowered spike, and rose-coloured flowers.  $\alpha$ . grows from Canada throughout the Allegheny mountains.  $\beta$ . in Carolina and Georgia. The plant is generally found on the sides of hills and in dry woods. It is abundant in Kentucky, Ohio, and Tennessee, and flowers from June to August. It was cultivated in England as early as 1759, by Philip Miller, and is still found at Kew Garden and other botanic grounds.

#### CHEMICAL PROPERTIES.

To the taste, the root is bitter, pungent, subtle and peculiar; but it has little or no smell. Both aqueous, and spirituous menstrua extract its virtue; but the alcoholic tincture obtains them most completely. The powder in substance, however, is generally believed to be more active than either the tincture or decoction. The latter when first taken are not peculiarly unpleasant, but speedily stimulate the mouth and fauces, and produce a free discharge from the salivary glands. A tincture of the root in rectified spirit, was formerly in great repute; and it was said to be more active and permanent in its effects. It is now disused. It has been said, and perhaps not without foundation, that the bark of the root contains most of the active power of the plant; and that the ligneous portion is comparatively inert. To this opinion Dr. Cullen inclines, though at the same time



he says the whole root has commonly been used without regard to this difference in the power of its different parts. Murray relates the results of analyses carefully made of the root of this plant, by those who have written on it. But from them we learn nothing remarkable, except that the aqueous is more abundant than the resinous extract; though the ligneous part of the root yields sufficiently, a resin, a mucilage, &c.

#### MEDICINAL PROPERTIES.

The Seneka snake-root possesses various medicinal virtues. It is stimulant, diuretic, sialagogue, expectorant, purgative, emetic and sudorific; and of late years it is esteemed a valuable emenagogue. Dr. Cullen has treated of it, both under the head of cathartics, and under that of diuretics. Dr. Barton, in his edition of Cullen, has assigned it a place under the head of emenagogues, and Dr. Chapman, under the head of stimulating diuretics, as well as under the head of expectorants and emenagogues. Its purgative effect was regarded by Dr. Cullen as its true characteristic; and under the opinion that it was most salutary, when it produced copious evacuations, he arranged it under the head of cathartics. From this opinion many respectable physicians dissent.

It is now more than eighty years, (1735) since Dr. John Tennant invited the attention of physicians to this medicine, as an antidote

against the bite of the rattle-snake. In an extensive intercourse with the Indian nations of our country, it appears that, induced by the offer of alluring rewards, he obtained from the Senagaroots, a disclosure of their secret remedy for this accident, or the disease arising in consequence of it. According to their practice, it was applied externally and internally, either chewed and applied to the wound, or in the form of cataplasm. Dr. Tennant himself saw, or thought he saw, beneficial effects from the root of this medicine in cases of this kind. He inferred from the similarity of those symptoms which supervened on the poison of the rattlesnake, to those of pleurisy, that the medicine would prove beneficial in that disease. He accordingly recommended it, and it has been much used, and with repeated good effect, in peripneumonic cases. The most prominent of the physicians who have borne testimony in favour of its powers in those cases, are Bouvart, De Jussieu, Lemery, and Duhamel. Sir Francis Millman, Dr. Percival, and others, have spoken highly of it as a diuretic in dropsies. Of late years the Seneka has been much used in croup, and numerous well attested instances of its beneficial effects are to be found in various publications. The credit of discovering the efficacy of the root in this complaint, is due to Dr. Archer,\* of Maryland, who, confessedly, was the first person that proposed its use in that distressing malady. The late Dr. Barton, on this subject says "from my own experience I am led to repose more confidence

\* See Medical Repository, New York, vol. ii. n. 1. art. vii.

in the use of this medicine (in croup) than in any other.”\* The salivating property of seneka has been long known, and the instances of this effect being succeeded by its use, are numerous and authentic. Its expectorant power has caused it to be used in cases of typhus with pneumonic symptoms, and with considerable success, greatly promoting, by stimulating the lungs, the expectoration of mucus. “Dr. Brandreth, of Liverpool, has derived great benefit in some cases of lethargy, from an extract of seneka combined with carbonate of ammonia.”† That it acts, occasionally, with much vigour as a sudorific, seems beyond disputation; but I cannot mention without some apprehension of raising a smile, the marvellous effect said to have been produced on the blacks who have used it. Dr. Barton mentions that he “has been assured it has been known to remove portions of the mucous body or rete mucosum from their skin.”‡ According to the doctor, the Indians use a decoction of this root in syphilis, and in malignant sore-throat. We are told by Dr. Woodville, that “the repute which this root obtained in peripneumonic affections, induced some to employ it in other inflammatory disorders, in which it proved serviceable, particularly in rheumatism.”§ The notion that this

\* Collections.

† Edinburgh Disp. by Dyck. p. 348.

‡ Collections.

§ Med. Bot. vol. 2. p. 255. Com. Novic. 1741. p. 363. Sarcone Geschichte de Kraukh. in Neapel, tom. 1. p. 108. 169. 173. 199.



root possesses the power of rendering the siziness of the blood more fluid, has been satisfactorily refuted by De Haen;\* and does really seem to be entitled to no serious attention.

From this summary of its virtues and effects, it will be seen that the seneka is a medicine of no common powers; but on adverting to what is manifestly the most prominent effect of its operation, its stimulant power, we cannot but be struck with the impropriety of administering it in the first stages of inflammatory disorders, such as pleurisy and croup; for the latter cannot be considered purely spasmodic. In these cases, unless the lancet has been freely used, the seneka cannot, I apprehend, be safely given. It is a stimulant of a very searching nature, influencing besides the circulation of the blood, the lymphatic and secretory organs in a powerful and peculiar manner. It does not really appear that it has ever cured true pleurisy; neither has the lancet been omitted in most of the cases of cyananche trachealis, in which it has proved serviceable: and it may be questioned, whether Dr. Archer has insisted enough on the propriety of blood-letting, prior to the extensive use of the seneka in croup. He recommends a strong decoction of the root in this disease, which acts as an emetic, cathartic, and expectorant. The decoction is made from half an ounce of the bruised or coarsely powdered root, and eight ounces of water, boiled over a slow fire down to half the quantity. Of this decoction he gives a tea-spoonful every half hour, or every

\* Ratio Medendi, par. 4. p. 252.



hour, according as the urgency of the symptoms may indicate ; and at intervals, a few drops to keep up the stimulus, until the medicine acts on the stomach or bowels. The medicine is to be repeated in diminished quantities, so as to keep up a constant stimulus in the throat and mouth. This practice has been imitated by many physicians with success.\*

\*The following is Dr. Barton's account of his use of this medicine in croup: "Since the beginning of the year 1798, I have employed a strong decoction of this plant in several cases of cynanche trachealis, or hives. I am persuaded, that the seneka is a very important medicine in the treatment of this common, and too frequently unmanageable, disease ; and praise, in my opinion, is due to Dr. Archer, for his important discovery ; for such I cannot but deem it. That the seneka is a specific, or certain remedy, for the cure of the croup, I do not believe : but, from my own experience, I am led to repose more confidence in the use of this medicine than in any other. I have made use of a very strong or saturated decoction of the root. I have always given it in large quantities. It appears to be chiefly beneficial, when it occasions an expectoration of mucus, and when it proves emetic. It is also very useful by virtue of its purgative quality. But I have known it to occasion very plentiful stools, without benefiting the patient. Indeed, in the exhibition of the seneka, I would rather wish to guard against large purging. I have sometime treated my patients *almost* entirely with the seneka. Even in such cases, I have perceived most unequivocal good effects from it. But I have, more generally, given, along with the seneka, calomel, and sometimes calomel combined with ipecacuanha. I have not omitted the employment of the lancet, (though this, in many cases of croup, is not absolutely necessary,) and the use of blisters, or sinapisms, applied near to the seat of the disease. I am happy to close this short notice by observing, that several respectable physicians in Philadelphia inform me, that they have used the seneka, with much advantage, in the disease in question."

It is a common practice to combine calomel with the seneka, and also Virginian snake-root. In union with the latter, I have seen much good effect from it in typhoid pneumonia. When combined with calomel, it should be reduced to powder, and made into boluses, of which the dose is, for an adult, about a scruple three or four times a day. The dose of the powdered root alone, is from thirty grains to two scruples; but as in this form it is apt to operate as a purgative, and sometimes as an emetic, it is preferred to give the decoction, which may be made by boiling an ounce of the root in a pound and an half of water, till it is reduced to a pound; and of this a table-spoonful is a dose, frequently repeated.

The discovery of the valuable emenagogue virtues of the seneka, originated many years ago, with my friend Dr. Hartshorne, an eminent surgeon of this city, whose experience, and habits of searching observation in the practice of his profession, warrant me in quoting him as authority of the highest value. From him I have recently learned the following facts: that he still continues to prescribe the seneka in amenorrhœa, with unimpaired confidence, resulting from much experience with its peculiar, (perhaps specific) operation in this disease. He has prescribed it many times, when the suppression of the catamenia was of very long standing, but in these cases its efficacy seems less conspicuous than in more recent cases. His usual mode of administering it, is in saturated decoction, to the extent of a pint in twenty-four hours, commencing about two weeks previous to the

expected menstrual period; and he has found it most efficacious when the system was prepared for its operation, during the two preceding weeks, by the administration of calomel, so as to produce a gentle ptyalism. The doctor has also used the seneka in these cases in substance, but prefers the saturated decoction. When the cases are of very long standing, one, two, or three years, he is in the habit of reiterating the practice as above detailed, with this exception, that he does not continue the use of the seneka during the whole period, because of the disgust it is under such circumstances apt to produce, by its nauseating tendency. At the instance of Dr. Hartshorne, this article was tried in amenorrhœa, some years ago, by Professor Chapman, and he speaks in the highest terms\* of his success.†

\*See his Elements of Therapeutics and Materia Medica, vol. ii. article Polygala seneka, under the head of Emenagogues.

†It is much to be regretted, that the credit of this important discovery of the emmenagogue powers of the seneka, has not been given, by either Dr. Thacher,‡ or Dr. Coxe, who copies and quotes the doctor, to him, to whom alone it is due; and it is but just to remark, that though in the publications of Drs. Thacher and Coxe,|| the name of Dr. Chapman is alone mentioned in relation to this subject, yet the latter gentleman has, in two publications§ on the seneka, not only acknowledged Dr. Hartshorne as first pointing out this peculiar effect of the seneka, but gives him all due credit for the discovery. These observations are made with a firm belief, that Dr. Hartshorne's name is inadvertently omitted in the publications of Thacher and Coxe; and with a design, by *rendering unto Caesar the things which are Caesar's*, to affix the merit due on this occasion, to an unassuming man of great merit, whose modesty would never suffer him to speak or write himself on the subject of any claim, wrested from him by inadvertence or design.

‡ Dispensatory, 3d. ed.

|| Dispensatory, 3d. ed.

§ Eclectic Repertory. Elements of Thera. and Materia Medica, 1818. 2d. vol.



I may here not impertinently remark, that in the treatment of a recent case\* of hydrophobia, under my care, I prescribed the *Polygala seneka* in pills, of the pulverized root, and in powders, under the impression, that in this fatal and mysterious malady, the prominent feature of which is the distressing affection of the pharynx and larynx, and an extreme difficulty of expectorating the great quantity of viscid mucous with which the trachea seems choaked up—it might prove serviceable. I was led to this practice from the analogy of its effects in croup, as detailed by Dr. Archer: and though in the short continuance of this disease, which ran its terrific and fatal course in less than two entire days, I had but little opportunity of coming to any decided conclusion on the effect of the seneka; still I ought to remark, that it promoted expectoration very freely. It was administered but for three hours, and not to any great extent. In a disease so direful in its symptoms and so universally fatal in its effect, it is a matter of no inconsiderable importance to seek alleviating remedies. I would therefore propose the free use of the seneka in cases of hydrophobia, with a view to its specific or remarkable operation on the apparent seat of this malady, the lungs, trachea and larynx; and should another case ever occur in my practice, I shall lose no time in the administration of a remedy so powerfully affecting these organs.

\* Of this case, which occurred between the 28th and 30th of the present month, (November,) and which supervened upon the bite of a rabid dog, I have drawn up a detailed account, which is to be soon published in one of our periodical journals.



## TABLE XXXVI.

Fig. 1. Represents a plant of the *Polygala seneka* in flower.

2. The root.

3. The calix.

4, 5, 6, 7, and 8. The different parts of the papilionaceous corolla.

(All the size of nature.)





Drawn from Nature by W. L. Gort.

Printed by J. B. Baillière, London.

*Asclepias tuberosa* L.

(*Asclepias tuberosa* L.)

## EUPATORIUM PERFOLIATUM.

### BONE-SET. THOROUGH-WORT.

Thorough-stem. Vegetable Antimony. Cross-wort. Indian Sage. Thorough-wax.  
“Ague-weed,” of the Indians.

*Germ.* Durchwachsener Wasserdost. (*Willd.*)

EUPATORIUM perfoliatum. L. Sp. Pl. 1174. Hort. Cliff. 396. Hort. Ups. 253. Roy. Lugdb. 156. Gron. Virg. 119. Cold. Noveb. 181. Mill. Dict. n. 8. Pluk. Alm. 140. t. 87. f. 6. Raj. Suppl. 189. Morris. Hist. iii. p. 97. Houttuyn. Lin. Pfl. Syst. iv. p. 243. Willd. Sp. Pl. iii. p. 1761. Mich. Fl. Am. Boreal. ii. p. 99. Pursh, Fl. Am. Sep. ii. p. 516. Hort. Kew. iii. 160. Cutler, 478. Stokes's Bot. Mat. Med. iv. p. 171. Guthrie, in Ann. Med. iii. 403. Schoepf, Mat. Med. Am. 121. Bart. Collections, 3d. ed. part i. p. 28. 55. part ii. p. 22. Anderson, Inaug. Diss. (New York, 1813.) Thach. Disp. 3d. ed. p. 220. Coxe's Disp. ed. 3d. p. 317. Dyck. Ed. Disp. p. 264. 415. Chapman's Element. Mat. Med. and Thera. vol. i. p. 343. ii. p. 415. Bart. Prod. Fl. Ph. 77. Comp. Fl. Ph. ii. p. 101. Big. Florula Bost. p. 190. Muhl. Cat. Pl. Am. Sep. p. 74. Pursh, in Medical and Physical Journal. Big. Am. Med. Bot. p. 33. Bart. Med. and Phys. Jour. Nutt. Gen. Am. Pl. vol. ii. p. 135.



## EUPATORIUM.

Gen. Pl. 1272.

Nat. Syst. Juss. *Corymbiferae*.Nat. Ord. Lin. *Compositae discoideae*.Artific. Syst. Lin. Classis *Syngenesia*. Ordo *Polygamia aequalis*.

EUPATORIUM, T. L.\* Eupatoire. Flores flosculosi. Calix imbricatus inæqualis oblongus cylindricus pauciflorus. Pappus plumosus. Caulis frutescens aut herbaceus, interdum scandens; folia in plurimis opposita, in paucis verticillata aut alterna; flores sæpè corymbosi terminales aut axillares, purpurascentes. Species quædam Linnæanæ calice polyphylo simplici non imbricato, Cacaliæ affiniores ex D. Lamark; quædam pappo piloso. An congener *Critonia* Brown. Jam. t. 34. f. 1., cui ex Autore calix '4-florus, pappus ramosus, cætera similia?

Juss. Gen. Pl. ed. 1789. p. 178.

Gen. Ch. *Common Calix* oblong, imbricated; scales linear-lanceolate, erect, unequal, unarmed. *Cor.* Compound, uniform, discoid; florets all uniform, perfect, fertile, monopetalous, funnel-shaped, with a regular 5-cleft spreading border. *Stam.* Filaments five, capillary, very short; anthers united into a cylindrical tube. *Pist.* Germen minute; style thread-shaped, very long, cloven, slender, bluntish, straight. *Peric.* None, except the permanent calix. *Seeds* solitary, oblong, angular; down long, rough or feathery. *Recep.* naked.

Ess. Ch. Receptacle naked. Down rough or feathery. Calix imbricated, oblong. Style prominent, cloven half way down, divaricated. Ency.

*Recep.* Nudum. *Pappus* pilosus. *Cal.* imbricatus, cylindricus. *Stylus* semibifidus, longus.

EUPATORIUM perfoliatum; foliis connato-perfoliatis oblongis sursum angustatis serratis, rugosis, subtus tomentosis, caule villosulo.—Willd. and Pursh.

Leaves connate-perfoliate, oblong, narrow above, serrate, rough, tomentose beneath; stem villous.

SYNONYMA.

EUPATORIUM Virginianum, Salviæ foliis, &c. Pluk.

EUPATORIUM foliis connatis tomentosis. Cutler.

EUPATORIUM connatum. Mich.

PHARM.

EUPAT. perfol. Herba et flores—the flowers and leaves.

THE subject of this article is wholly destitute of any thing like comeliness, but is a very general favourite and will probably always be highly esteemed, for its medicinal powers. The plant which gave name to the very extensive genus of which the Bone-set is a species, is the *εὐπατωρίον*, of Dioscorides, from Mithridates, surnamed Eupator, who is reputed to have brought the original plant into use as an antidote against poisons. Most of the species, of which Willdenow enumerates seventy-one, are indigenous to America. Pursh describes twenty-seven as natives of North America; and others will be found extending beyond the tropics as far as Peru and Paraguay. Those indigenous to our states, are all plain looking plants, except the *E. cœlestinum*, the beautiful blue flowers of which have given rise to the appropriate specific name. Many of them, however, compensate in stature for what they want in beauty;

several of the red-flowered species being from five to seven feet high. They decorate our autumnal landscapes, by the profusion of their red and white flowers, and by the abundance in which they are every where met with.

The present is perhaps one of the commonest, if not the most common, of all the species inhabiting our country; being found in meadows, damp woods, watery thickets, and on the margins of brooks, rivulets and other small waters, in the greatest profusion—covering indeed occasionally, whole acres of ground. It is peculiar to North America, and is easily distinguished from all the other species, to many of which it is nearly allied by its general habit and its flowers, by the remarkable structure of its leaves, which decussate each other in such a manner as to have given rise to the appellation of cross-wort. It may also be readily known by its blistered or rugose leaves, which have imposed on it the epithet of Indian Sage. But another discriminating mark in the leaves, arises from the manner in which they are perforated by the stem; and hence the vulgar names, Thorough-wort and Thorough-wax.

The origin of the common name *bone-set*, it is not easy to ascertain; though a mere suggestion of Professor Barton seems to have afforded a late writer on the *Materia Medica* a hint for a derivation, which he has not failed to avail himself of. We are told by this gentleman, upon what authority other than his own, we are



left to conjecture, that the plant derived the name of bone-set from the relief it afforded in a certain "singular catarrh or species of influenza," which prevailed about thirty years ago, and was denominated break-bone-fever. We are satisfied the Professor would find it extremely difficult to shew by any printed testimony, that the medicinal powers of *Eupatorium perfoliatum* were generally known even twenty, much less thirty years ago, or that the vulgar name, bone-set, is of earlier origin than fifteen years back.

The root is perennial, somewhat horizontal. The stems erect, from two to four feet high, round, very hairy, (hair flexuose,) and divided towards the top into decussating branches, so as to form when in flower, a flat dense fastigate corymb. The stem is generally greyish-green, but often purplish towards the base. The leaves decussate each other at regular distances; are perfoliate, or perhaps connate, broadest at their base or point of union with the stem, and taper gradually into a long acumination. They are serrate, very rugose or wrinkled, closely beset with hairs of a grey colour, which, together with those wherewith the stem, and indeed nearly the whole plant is covered, give it a greyish-green aspect. The under surface of the leaves is paler than the upper, and both woolly. The two or three upper pairs of leaves on the stems, and all those on the branches, are given off in pairs, and lose the perfoliate or connate character, being there merely sessile. Flowers terminal, white, supported on short hairy peduncles, in close fastigate corymbs. Calix



imbricate and hirsutulous; scales lanceolate, acute. Florets about twelve or fourteen. Each flower tubulous, divided into five segments or teeth, as represented in Fig. 3. Anthers deep blue or black, filaments five, united with a fistulous brace. Seeds prismatic, attenuate at the base, of a crow-black colour, and situated on a naked receptacle. Pappus or down of the seed pilose; hairs scabrous. The flowers are fully expanded in the month of August, and the plant is every where found in bloom during the autumn, and even as late as the last of October.

#### CHEMICAL PROPERTIES.

We are indebted to Dr. Andrew Anderson, for an excellent chemical analysis of this species of *Eupatorium*. According to his experiments, it appears, that it contains first: a free acid—secondly, tannin in small quantity—thirdly, a bitter extractive matter—fourthly, a gummy matter—fifthly, a resin—sixthly, azote—seventhly, lime, probably the acetate of lime; eighthly, gallic acid, probably modified; ninthly, a resiniform matter soluble in water and alcohol, which seems to contain a bitter principle.

The medicinal properties of bone-set are fully given out, both to aqueous and spirituous menstrea. Proof spirit digested on the leaves and flowers, make a fine preparation for cases which will bear the spirit.

## MEDICINAL PROPERTIES.

Great indeed is the renown of the *Eupatorium perfoliatum*, as a medicine, and various as well as powerful are the virtues attributed to it. Should a wide extended experience justify, in future, only one-half the encomiums which have been lavishly bestowed upon it, it will even then be entitled to a distinguished rank in the *Materia Medica*. It is impossible to read the accounts which are given of the virtues and effects of this popular medicine, without indulging the belief, that favouritism, partiality, or fashion, has had some share in decorating it out for public view. Believing as I do, that few plants of our country are more deserving of the attention of physicians than this, for its real virtues, I regret the too ready adoption from vague rumours, of accounts of those which are merely imaginary, and which may lead, on the discovery of the error, to limit its use, or to its total rejection from practice. Notwithstanding the real, the obviously beneficial effects, in curing, or alleviating diseases, or symptoms of diseases, which belong to this plant, some of those who have written on its properties, have needlessly indulged in a vein of exaggeration, wholly incompatible with the reality, and calculated to bring the medicine sooner or later into disrepute. I have ventured to speak thus confidently on this subject, because as it is a favourite article in my own practice, I have consequently been led to use it frequently and ex-

tensively, and to give it every trial which a favourable impression of its powers would induce me to make. The result has been, that while I deem its properties on the one hand much exaggerated and even misrepresented in some points of view, I cannot but believe on the other, that it is a highly important article, when administered in those affections, to the symptoms of which its peculiar virtues are applicable and proper.

Bone-set has been represented by various writers, most of whom have copied after others, as a tonic, stimulant, diaphoretic, emetic, cathartic, diuretic, astringent, and deobstruent; as capable of curing obstinate cutaneous affections, yellow fever, petechial or spotted fever, rheumatism, &c. &c. thereby leading the unwary and the inexperienced practitioner, to depend too much on its reputed powers.

The sensible properties of bone-set would seem to point out its most estimable medicinal powers. The whole plant is intensely bitter. It is also possessed of some slight astringency. When dried it has a peculiar, and not disagreeable odour.

The leaves and flowers according to some writers on the subject, contain the bitterness, in different degrees of intensity. The late Professor Barton states in his collections, that the flowers are more active than the leaves, and in this error, Dr. Chapman has copied him. Dr. Anderson on the other hand asserts, that the leaves are more active



than the flowers, and he has been copied by Thacher, Coxe, and others. Careful practical experiments with the decoctions and infusions of both these portions of the plant, in similar and dissimilar doses, have led me to form the opinion, that there is no difference in the bitterness or activity on the system, between the leaves and flowers. Both may be used indiscriminately, and either will answer. The stems also, allowing for the proportion of medulla which enter into their structure, are nearly as efficacious, as the other portions. Consequently, the whole plant may be safely and advantageously used for medical purposes.

I have said that the sensible properties of the bone-set indicate its medicinal virtues; and it appears that the tonic and diaphoretic effects, both of which are unequivocal and powerful, are those most deserving attention. It is also somewhat stimulant, but this effect is transient; and perhaps it is no more so than all bitters are, in their first impression on the system, particularly if it be debilitated by disease, or in a state of excitement from fever. It is certain that it has been successfully prescribed in violent catarrhs attended with some fever, and its stimulant effect has not been so considerable as to be injurious in those cases. As a tonic bitter it has been long known in this country, and the Indians are said to have used it in the cure of intermittent fevers; we are even told by the late Professor Barton, that they recognize it by a name which may be translated



*ague-weed.* Imitating their practice, many country physicians of respectability use it as a substitute for Peruvian bark in these affections. Their reports are uniformly favourable to the powers of the article in curing those fevers, unassisted by any other medicines. This practice is particularly common in the middle and lower parts of Jersey, where I have had opportunities of knowing that this plant was successfully used by practitioners of medicine, and in domestic practice, in the treatment of many of the different types of intermittent fever. Dr. Anderson, in his inaugural thesis, enumerates and details some cases of quotidian, tertian, and quartan intermittents, in which the bone-set had, under his own observation, performed cures. His favourable accounts are supported by the testimony of Dr. Hosack, who has frequently prescribed the article in the treatment of intermittents. I am not able to offer any corroborative testimony in favour of this plant in these affections, never having used it in them. Dr. Barton says, that in decoction it has been efficaciously administered in the hot stage of simple intermittents. The copious perspiration produced when thus given warm, is highly beneficial, and it is this effect which has given the plant the appellation of "vegetable antimony." The Doctor, however, seemed to think, that to the heat of the water when employed in this manner, was greatly owing the diaphoretic effect; and, unaided by this adventitious circumstance, he doubts whether the determination to the skin can equal that of *Polygala seneka*. In cold infusion I have not been able to see any very decided or remarkable diaphoretic effect from it.

The efficaciousness of bone-set is not confined to the simple forms of intermittent fever. It has, beyond disputation, been successfully employed in remitting bilious, in yellow, and typhus fevers, particularly in the form of the latter disease, lately so rife throughout the United States. And it is in cases of this disease that I have myself used it, and in which I can offer the additional experience of an excellent practitioner, the late Samuel C. Hopkins, M. D.\* This gentleman resided in the village of Woodbury, New Jersey, and enjoyed an extensive practice in a range of fifteen or twenty miles of a populous tract of country, in which, from the low and marshy nature of the soil—exposure of many of the inhabitants holding fisheries, to the water, and other pernicious causes—intermittent and typhus fevers were very prevalent, and the latter particularly malignant. The Doctor was among those partial to the sweating plan of treating this fever, and his unusual success in a multitude of cases for five or six years in succession, is strongly in favour of that mode of practice. The bone-set was the medicine used in producing this effect. He prescribed it freely in warm and cold decoction, but preferred the warm. He assured me that in many instances, his sole reliance was on this plant, which was occasionally so varied in its manner of exhibition, as to produce emesis; and frequently was intentionally pushed to such extent, as to excite free purging. Its

\* Late of Philadelphia.—This amiable and excellent man fell a victim to typhus fever.

diaphoretic effect, however, he deemed it indispensable to ensure, and therefore preferred in general giving it warm. He has related to me many instances in which farmers had, without calling in medical advice, or where it could not readily be procured, resorted of their own accord to the free exhibition of a strong decoction of this plant, for several nights and days in succession, assisting its sweating effect by warm bed-clothing; and uniformly with beneficial, often with entirely successful effect.

Encouraged by these reports, I have in every instance which has occurred to myself, imitated this practice, not, however, placing such entire reliance on this means of cure as did the Doctor, but using in addition, repeated small purgings. Yet I am decidedly of opinion, from my experience with this article, that it is, in all cases of low typhus, attended with hot and dry skin, as is commonly the case, an inestimable medicine; and I have seen reason, in my own trials, to prefer the warm decoction or infusion, to the cold, or to the plant given in substance. In every instance I have used the decoction of the flowers and leaves of the dried plant, to which form I give preference to any other. I have not found it so apt to produce vomiting in this way, if judiciously and cautiously administered, as the writers in our dispensatories seem to fear. From one to two table spoonfuls given every half hour is, I think, the best plan to ensure its diaphoretic, and avoid its emetic effect. In



this way it excites nausea, and keeps up the moisture of the skin. Its mere tonic effect is most easily ensured by giving in substance, from twenty grains to a drachm of the powdered leaves and flowers, from three to six times in the course of twenty-four hours.

Of the beneficial administration of bone-set, in the treatment of yellow fever, medical records present us with well authenticated accounts. It was extensively used by some practitioners in this disease, at least as early as one thousand seven hundred and ninety-eight, when it was then rife in this city ; and we have the authority of Dr. Barton to believe, that in that epidemic and others, it was used with much advantage. Pursh, the Botanist, likewise states, in a letter addressed to William Royston, Esq. inserted in the Medical and Physical Journal, that much benefit was derived from its use by himself and others, during his stay in the neighbourhood of Lake Ontario ; where both the influenza and lake fever, the latter of which he says was similar to the yellow-fever, were raging among the inhabitants. In those cases it was used in decoction, and spirituous infusion.

It appears by Dr. Anderson's Thesis, that the bone-set was extensively used in the New York Alms-house, in the year one thousand eight hundred and twelve, in the treatment of intermittents, to the exclusion of the Peruvian bark. It was given either in decoction, or in powder. In the latter, in doses from twenty to thirty grains every second hour during the intermission. This practice the Doctor states,



was followed with uniform success. He further informs us, that Dr. Hosack and Dr. Bard, in the treatment of yellow-fever, placed almost exclusive dependence, after proper evacuations, on sudorifics ; and among this class of medicines used the bone-set, and estimated it highly. More evidence in favour of this article in febrile affections might be adduced ; but I presume enough already has been stated to show its undisputed claim to be ranked as a valuable article of the *Materia Medica*. Yet, though I have much reliance on the powers of this plant, I cannot advocate or recommend the practice of depending exclusively on its effects, in the treatment of fever or catarrhs, of whatever kind. That it would be safer to use it as an auxiliary, than to rely wholly on its powers, in any but slight cases, does not, I think, admit of a doubt.

I must here mention, that the bone-set has likewise been said to cure acute rheumatism ; and that it has been used in those cases, my own enquiries and observations assure me. Though I do not know any well-attested facts of its efficacy here, or of any cures that it has performed of this disease, I yet think it more than probable, its sweating powers might be advantageously enlisted, in conjunction with blood-letting, to cure acute rheumatism, after the highly inflammatory action has been nearly or wholly subdued. But, perhaps, in the chronic state of this disease it would be more safely administered, and not unlikely, more usefully.

Dr. Barton speaks of its alledged beneficial effect in a cutaneous affection of a very peculiar character, which appeared some years ago in Virginia, and was called, from the part of the country in which it raged, the James's river ring-worm. This solitary fact is all that can be adduced in favour of its efficacy in cutaneous diseases, and it does really not appear to me to be sufficiently supported by corroborative testimony, or the experience of others.

It cannot be doubted that, on this point, powers have been ascribed to the plant which it does not possess. This much a regard for truth, obliges me to declare, that in three or four cases of obstinate cutaneous eruptions, in which I have given the bone-set every fair trial, it proved utterly worthless.

I can readily believe, it has done good in diseases of general debility, which occurred in the New York Alms-house, as mentioned in the thesis already referred to. But that it is competent to the cure of dropsies, I much doubt. Indeed my enquiries and observations in different states, do not corroborate the assertion of Dr. Chapman,\* that "the physicians of this and the neighbouring states, are much in the habit of prescribing it, in dropsical effusions." I have no where been able to learn, that, either by physicians or in domestic employment of the plant, such a practice has been resorted to.

\* Elements Mat. Med. vol. i. p. 345.

Neither does it seem probable to me, that the sensible or other known properties of bone-set, justify the notion, that in such cases it would be efficacious. From its tonic effect, indeed, it may not be injurious, but perhaps this is the utmost that can be said on this point. Certainly the inconsiderable diuretic consequences of the use of the herb, promise nothing beneficial in dropsies. For any effect it may occasionally have on the kidneys, it shares with many other diaphoretic remedies, which, particularly if given in warm decoction, are well known occasionally to increase the urinary discharge.\* Schoepf speaks of its use in gout, and recommends its external application for the relief of pains.

After the preceding observations, I am fully justified in recommending the bone-set as a valuable tonic bitter, at least equal to the chamomile; and as a medicine truly valuable for its diaphoretic effects. And though its other occasional qualities are not, in themselves, sufficient to recommend the plant to the notice of physicians, yet they certainly enhance the value of the article. The plant is so abundant throughout the country, that it is within the reach of every country physician, and those residing in cities or towns can also readily procure it; a circumstance which adds much to the satisfaction I feel in recommending it.

\* It is not improbable that the Professor, who disclaims all knowledge of botany, and whose work indeed, on the *Materia Medica*, teems with botanical errors, may have mistaken the plant used in dropsies, or been misinformed.

TABLE XXXVII.

Fig. 1. Represents a flowering specimen of *Eupatorium perfoliatum*.

I have often seen the flowers reddish-purple.

2. A flower separated, and greatly magnified.
3. A floret separated from the flower, still more magnified.
4. Anthers embraced by the tube—somewhat enlarged.
5. A seed, magnified.









From the Herbarium of the University of Toronto

From the Herbarium of the University of Toronto

*MENISOPHORA VANCOUVERIANA*

[Islandia, Canada.]

## MEDEOLA VIRGINICA.

### INDIAN CUCUMBER. CUCUMBER-ROOT.

*Germ.* Virginische Medeola. (*Willd.*)

**MEDEOLA** *Virginica*. L. Sp. Pl. 483. Mill. Dict. n. 3. Gron. Virg. 39. Pluk. Alm. 401. t. 328. f. 4. Houttuyn. Lin. Pfl. Syst. vi. p. 389. Willd. Sp. Pl. tom. ii. par. 1. p. 270. Pursh, Fl. Am. Sep. vol. i. p. 244. Bot. Mag. 1316. Mich. Fl. Am. Borecal. i. p. 214. Muhl. Cat. Am. Sep. 2d. ed. p. 37. Bart. Prod. Fl. Ph. 44. Comp. Fl. Ph. vol. i. p. 175. Big. Flor. Bost. p. 85. Nutt. Gen. Am. Pl. vol. i. p. 238. Walt. Fl. Car. p. 126. Elliot. Fl. Georg., &c. vol. i. p. 426. Schoepf, Mat. Med. Am. p. 53. Bart. Collect. 3d. ed. par. i. p. 38. Hort. Kew. vol. i. p. 489. Cutler, 437. Stokes, Bot. Mat. Med. vol. ii. p. 326. Coxe's Disp. ed. 3d. p. 410. Dyck. Ed. Disp. p. 417.

### MEDEOLA.

Nat. Syst. Juss, *Asparagi*.

Nat. Ord. Lin. *Sarmentaceae*.

Artif. Syst. Lin. Classis *Hexandria*. Ordo *Trigynia*.

*Corolla* 6-parted, revolute. *Calix* none. *Filaments* and *anthers* distinct. *Styles* none.



*Stigmas* three, filiform and divaricate, united at the base. *Berry* 3-celled; cells 5 or 6-seeded. *Seeds* compressed, 3-sided.

Nutt. sub. *Gyromia*, Gen. Am. Pl.

**MEDEOLA** *Virginica*; caule lanugine decidua vestito; foliis in medio caule 6-8 verticillatis, in summitate ternis; ovali-lanceolatis; pedicellis aggregatis, terminalibus. *Mich.*

Stem simple, erect; leaves verticillated; flowers terminal, aggregate. **B.**

#### SYNONYMA.

**MEDEOLA** foliis stellatis lanceolatis fructu baccato. Gron.

**LILIUM** s. *Martagon pusillum*, &c. Pluk.

**MEDEOLA** *verticillifolia*. Stokes.

**GYROMIA** *Virginica*. Nutt. and Bart. in Comp. Fl. Ph.

#### PHARM.

**MEDEOLÆ** *Virginicæ Radix*.

THE *Medeola Virginica* is remarkable for the extreme regularity and simplicity of its structure, and may certainly be considered as a handsome plant. I have always endeavoured to give in this work, the derivation of the generic name, wherever it was known; but in the present instance it is not easy to determine whence the name *Medeola* originated. Professor Martin supposes that it is

the diminutive of Medea, the renowned sorceress of ancient Mythology ; and this appears to be the only suggestion on the subject, entitled to consideration.

The genus *Medeola* comprises three species, one or two of which Michaux, Gawler, and some other botanists have proposed to expunge. Jussieu intimates that it should be referred to *Trillium* or *Paris*, from its analogy to those genera, having verticillated leaves and the habit of *Trillium* ; and Mr. Nuttall has recently severed the species now under notice, from *Medeola*, and constituted it a new genus, to which he has given the name of *Gyromia*, from *γυρος*, a circle, in reference to its verticillated leaves. He does indeed appear to have good reason for this separation ; the present plant, having a three-celled berry, each cell containing from five to six seeds ; while the other two, which are African species, have berries containing three cordate seeds. Therefore it was, that in my *Compendium Floræ Philadelphicæ*, I rather hastily adopted the new name. As, however, some inconvenience arises in a medical work like this, from the change of long-received names, I have, for the present, preferred the old one of *Medeola*.

The root is horizontal, from one to two inches long, about half an inch thick, oblong, fleshy, pure white, and covered with a few fibrous radicles. The stem is from one to two feet high, herbaceous, very erect, terete, shining, of a yellowish colour, and covered for a few

inches above and below the lowest whorl of leaves, with a deciduous, white, flocculent coat, which can easily be removed by drawing the stems between the fingers. The leaves are in two distinct, remote whorls. Those forming the lowest whorl, which is about midway of the height of the stem, are about six or eight in number, broad, lanceolate, acuminate, attenuate at the base, entire, three-nerved, of a very yellow green above, and glaucous or nearly so on the under-side. The upper whorl is at the top of the stem; and generally consists of three, but sometimes of four or five leaves, which are ovate, acuminate, attenuate at the base, and, like those of the lower whorl, entire, three-nerved, yellowish green above and nearly glaucous beneath. Mr. Elliot describes the leaves as membranous, which in the living state of the plant, I think they can scarcely be considered; though they do indeed dry with that appearance. The flowers are situated on the top of the stem; are aggregate, about three or six in number, two being mostly opened at a time, pedunculated, generally drooping and concealed under the upper whorl of leaves. They are supported by peduncles about three quarters of an inch or an inch long, first green, afterwards becoming red. The corolla consists of three straw-yellow petals, which are revolute, lanceolate, or lanceolate-oval, obtuse, appearing narrower on the flower than when separated and spread out as in Fig. 4, owing to the margin being somewhat repand; Linnæus says the specimen he received from Gronovius had four petals. Stigmas three, long, irregularly twisted, and divaricating horizontally, grooved above, and of a fine chesnut or madder



brown colour. Stamens six, of the same colour. The berry is about the size of a common pea, of a blue colour, inclining to purple, and containing three cells, each having from five to six compressed three-sided seeds.

This plant has a wide range in our states, being every where found in moist rich woods, according to Michaux, Pursh, &c. from Canada to Florida. Its favourite situations are low thickets, bordering on rivulets; and in such places it will be found abundantly in the neighbourhood of this city, flowering in the months of May and June.

#### MEDICINAL PROPERTIES.

The claims of cucumber root, to be ranked as an article of the *Materia Medica*, are rather humble. It must be acknowledged that the sensible properties of the plant do not augur very favourably of its activity or usefulness, and it is even said the Indians eat the root as we do the cucumber. Yet it has been deemed proper to figure and describe it in this work, in consideration of some little repute it has enjoyed, as a diuretic, and its alleged benefit as a hydrogogue. Little seems to have been known of its real virtues, by those who have noticed it as a medicine. Schoepf, it is true, has enumerated it among the articles of the vegetable *Materia Medica*



of this country: but he only asks the question whether it is allied to Ipecacuanha in its powers, referring to Linnæus's *Flora Lapponica*, and to Gronovius. Undoubtedly it is not entitled to any regard as an emetic; and it seems probable that its hydrogogue powers alone are worthy of any consideration. The late Professor Barton speaks dubiously in his publication on this subject, of its use in dropsies, which he mentions it has had the credit of curing. But I learned from him a year before his death, that some trials made by himself, in consequence of various information received from respectable sources of its virtues as a diuretic, resulted in the confirmation of the good accounts of the plant. They induced him to think more favourably of its powers. Though I have had no experience with it, as a medicine, I beg leave to recommend it for further experiment. Of the manner and dose in which it has been used, I know nothing.

TABLE XXXVIII,

Represents the entire plant.

Fig. 1. The upper portion with the terminating whorl of leaves, flowers, and incipient fruit.

2. The lower portion (separated from Fig. 1, at the mark +) with the inferior whorl of leaves. The shaggy marks of the graver along this portion of the stem, intended to represent the flocculent investment, which in the plant itself covers just thus much of the stalk.

3. The root and lower portion of the stem, severed from the upper (Fig. 2.) at the mark o.

4. Peduncle supporting the germ, and three stigmas.

5. A stamen.

6. A petal.

7. The ripe berry.

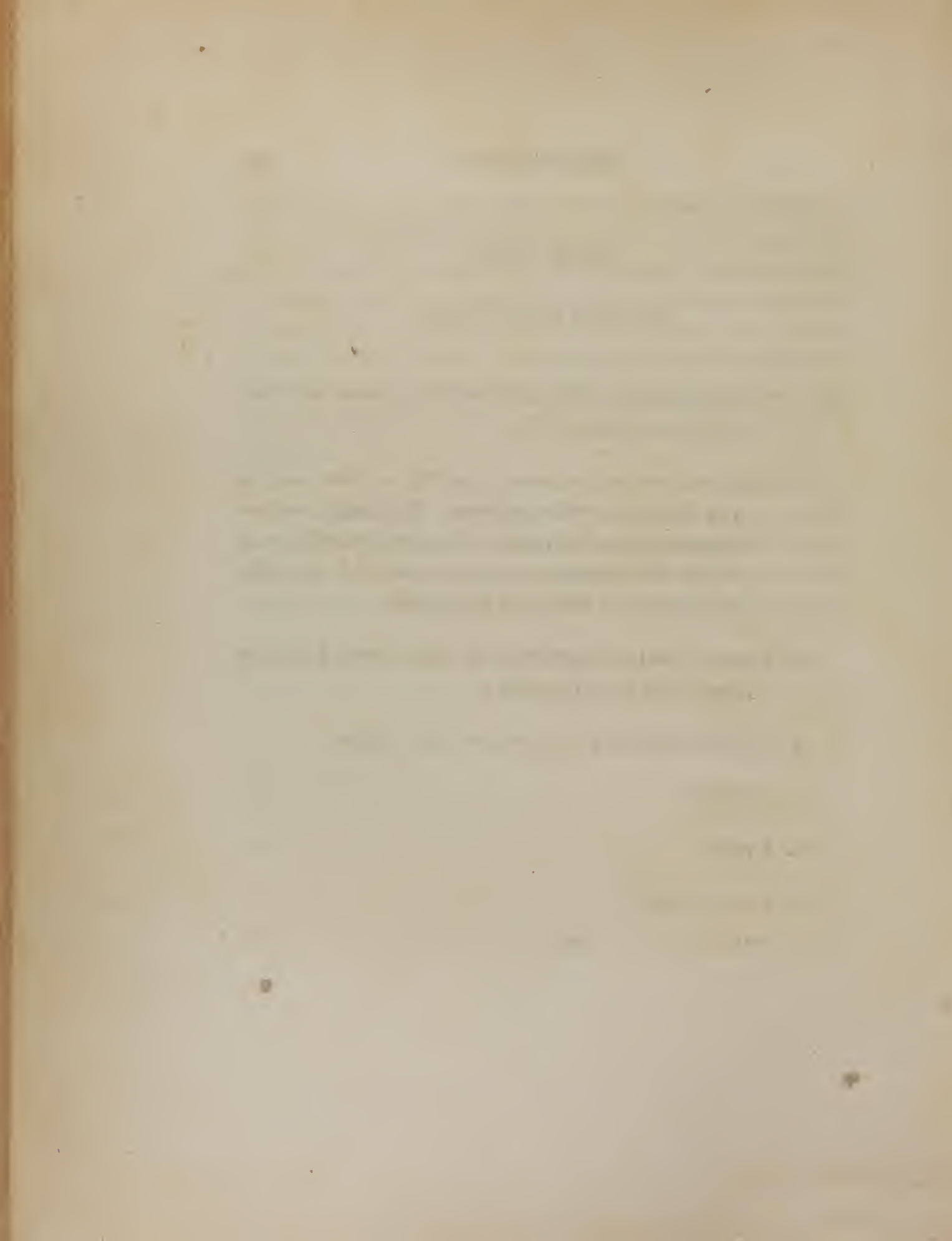








Fig. 1.

Fig. 2.

Drawn from Nature by W. F. Bartol.

anner, Wallace, Hering, & Co.

RUBUS VILLOSUS.

(Blackberry.)

## RUBUS VILLOSUS.

### COMMON BLACKBERRY-BUSH.

High or Standing Blackberry. Hairy American Bramble, Ait.

*Germ.* Haarige Himbeere.—(*Willd.*)

**RUBUS Villosus.** Willd. Sp. Pl. 2. p. 1085. Pursh, Fl. Am. Sep. 1. p. 346. Hort. Kew. ii. p. 210. Nutt. Gen. Am. Pl. i. 308. Bart. Prod. Fl. Ph. 56. Comp. Fl. Ph. i. p. 232. Muhl. Cat. 2d. ed. p. 52. Dyck. Ed. Disp. 366. Thach. Disp. 3d. ed. 340. Big. Florula Bost. 122. Mich. Fl. Boreal. Am. i. 297.

## RUBUS.

Gen. Pl. 864.

Nat. Syst. Juss. *Rosaceae*.

Nat. Ord. Lin. *Lenticosae*.

Artific. Syst. Lin. Classis *Icosandria*. Ordo *Polygynia*.

**RUBUS, T. L.** \* *Ronce, Framboisier*. Calix patens 5-fidus. Petala 5. Stamina numerosa breviter. Semina numerosa baccata, suprà receptaculum commune densè collecta in baccam compositam. Frutices aculeati vel quandoque inermes,

rariùs herbæ semper inermes; folia simplicia aut ternata aut digitata, aut pin-  
nata in Rubis quibusdam Commersonianis habitu similibus Rosæ; flores ter-  
minales aut et rariùs axillares, racemoso-paniculati aut rariùs solitarii, in *R.*  
*odorato* corymbosi et abortu dioïci. *R. Chamaemorus* sub terrâ monoïca et ex-  
tùs dioïca, radicibus maris et fæminæ junctis, caulibus distinctis, observante  
post Solandrum Linnæo. Juss. Gen. Plant. ed. 1789. p. 338.

*Cal.* Patens, 5-fidus. *Pet.* 5. *Bacca* composita, acinis monospermis.

Gen. Ch. *Cal.* Perianth inferior, of one leaf, flattish, in five oblong, spreading, sim-  
ple, permanent segments. *Cor.* Petals five, roundish or oblong, somewhat  
spreading, inserted into the calix, and usually about the length of its segments.  
*Stam.* Filaments numerous, shorter than the corolla, inserted into the ca-  
lix; anthers roundish, compressed. *Pist.* Germens numerous, altogether su-  
perior; styles small, capillary, one springing from the side of each germen;  
stigmas simple, permanent. *Peric.* Berry compound, consisting of several  
roundish pulpy grains, each of one cell, collected into a convex head, hollow  
underneath, inserted upon a conical spongy permanent receptacle, and at length  
deciduous. *Seeds* solitary, oblong, compressed.

Obs. The separate juicy grains, which compose the general berry, are usually  
so attached to each other, that they cannot be disunited without lacerating. In  
*R. saxatilis* they are distinct. *R. Chamaemorus* is not, as Linnæus first thought,  
dioecious, but monoecious; Dr. Solander having observed that the male and  
female flowers grow from one root, though on separate stems. Each flower  
of this species has indeed both stamens and pistils, though, in one or other  
flower, one part is imperfect.

Ess. Ch. Calix in five simple segments. Petals five. Berry superior, composed of  
single-seeded grains, deciduous. Receptacle permanent. Ency.

*RUBUS villosus*; pubescens, hispidus, aculeatusque; foliis 3-5-digitatis, foliolis ovato-  
oblongis, acuminatis, serratis, utrinque pubescentibus, caulibus petiolisque acu-  
leatis, calice brevi acuminato, racemo laxo, pedicellis solitariis.

Willd. and Pursh.



Pubescent, hispid and prickly; leaves 3-5-digitate, folioles ovate-oblong, acuminate, serrate, every where pubescent; stems and petioles prickly, calix short, acuminate, raceme loose, pedicels solitary. B.

PHARM.

RUBI villosi, Radix, herba et fructus.

THE term *Rubus* is an ancient Latin word, said to be of the same origin as *ruber*, which is supposed to be the Celtic *rub*, red; the prevalent colour of the fruit of many different species of *rubus* being red. The genus comprises a great number of plants, valuable for the grateful esculent quality of their fruits; and contains also about fifteen species,\* which may be considered as medicinal. The whole number enumerated by Willdenow is thirty-one; but it is now known to be much greater, at least fifty species being ascertained as existing in Europe, the West Indies, Peru, Chili, Japan, China, in the islands of the Pacific, and on the continent of India. Those indigenous to this country are about nineteen or twenty, of which by far the most frequent, is the common blackberry, now to be particularly mentioned. It is however so universally and so well known, that it does not require a minute description. The root is creep-

\* 1. *Rubus chamaemorus*. 2. *R. trifidus*. 3. *R. arcticus*. 4. *R. saxatilis*. 5. *R. mollucanus*. 6. *R. quinquelobus*. 7. *R. occidentalis*. 8. *R. parviflorus*. 9. *R. cæsius*. 10. *R. corylifolius*. 11. *R. fruticosus*. 12. *R. idæus*. 13. *R. rosifolius*. 14. *Rubus procumbens*. 15. *R. villosus*.



ing, irregularly gibbous, perennial, woody, and of a reddish-brown colour, imparting a madder-brown or claret colour to water boiled on it. The stems are biennial, from three to seven feet high, weak, somewhat shrubby, of a reddish-brown colour, armed with large prickles. The smaller branches and new shoots are more slender, herbaceous, greenish, with here and there a tinge of brown or red, and also covered with prickles and fine hair. The leaves are in five's and three's, oval, acuminate, finely and sharply serrate, villous on both sides, and soft to the fingers, strongly veined and varying in size. The petioles are prickly, and also covered with hair. The flowers are large, white, borne in terminal panicles or racemes, consisting of a five-petalled corolla and numerous stamens. The filaments are very slender, and the anthers small. The fruit is first green, then red, and, when full ripe, of a deep shining crow-black, and deliciously flavoured when suffered to ripen on the bushes.

The blackberry is every where found in our states, by way sides, in old fields, along the margins of stone quarries, &c. delighting in dry arid soils. It flowers from May to July, and ripens its fruit in August.

#### MEDICINAL PROPERTIES.

Popular confidence in the medicinal virtues of the blackberry, has induced me to introduce it in this work; and popular partiality

may account for the numerous tales of its wonderful powers. Due abatement on this account must therefore be made, from the report of its efficacy as an antilithic, a vulnerary, a febrifuge, a refrigerant, &c.

Few native articles possess a greater share of the favouritism of domestic practitioners ; and in many sections of our country, blackberry tea is resorted to as a general corrective of all vitiated humours, a strengthener of the stomach and bowels, in short, as a perfect panacea. Like most other favourite articles in family use, its virtues have been overrated ; but I am persuaded that there remains a sufficiency of creditable testimony in its favour, proving that its real medicinal virtues are valuable, and eminently serviceable in such disorders as require the exhibition of articles of an astringent nature ; for this plant, in every part, is decidedly astringent, but the root especially partakes of this property. It is the root which is generally used, made into a tea ; and the fruit in juice or syrup. The root is brought to our markets in the spring and fall of the year, and sold for medicinal purposes. A decoction made by boiling a handful of the cut or bruised portions, in a pint and a half of water, down to a pint, is the usual form of using it. Thus prepared, it is given in diarrhœas and dysenteries by the peasantry ; and, as I have been uniformly informed by intelligent persons, with great success. The decoction is somewhat bitter, but not disagreeable, and is marked by a slight but grateful aroma. Its tonic effect, of which I have heard some

praise, is certainly very inconsiderable, or at least evanescent; and in cases of mere debility, unless proceeding from a general laxity of the system, accompanied with slight disorders of the alimentary canal, it cannot be resorted to with any reasonable prospect of success. As to its reputed powers as an antitithic, I really do not think them worth consideration.

I have had some little experience with this article, and about a year since prescribed it in two cases of colera infantum with success. It was during my attendance in the Philadelphia Dispensary; and patients of the class which resort thither, are prone to follow the prescriptions of their physicians, when they order *herb teas*, so that I had a fair opportunity of seeing the power of this article. The fruit which is gratefully acidulous, is kind and healing to the disordered stomach and bowels of persons labouring under dysentery, recent or protracted. It may be eaten by such persons, in its full ripe state, when not too long gathered, not only with impunity, but evident advantage; being found to promote the natural and healthy secretions of the body. To children labouring under the bowel complaint, during dentition or at other times, it is particularly grateful and beneficial. It is a more common practice, however, to give in such cases, and in the dysenteries of adults, a preparation known in families by the name of blackberry jam, or often a syrup, recent or preserved, made from the full ripe fruit. Of the efficacy of the former I have seen many



instances, among which is my brother, who, while labouring under a severe attack of dysentery, experienced the most sudden and salutary change in his disorder, on my giving him the jam plentifully. As nothing can be more grateful to the stomach of persons, adults or infants, affected with this disease, it should always be resorted to when procurable, and given almost *ad libitum*. The fine aroma of the fruit is preserved both in the syrup and the jam, and a few spoonfuls of it will be found to relieve the painful tenesmus.

A jelly made of the fruit when on the turn from red to black, has been said to be useful in gravelly complaints ; but this, I think, is not entitled to any credit.

The dose of the decoction, is a teacup full for an adult, and two or three tea-spoonfuls for a child, three or four times a day.

Schoepf describes, in a medicinal point of view, the *Rubus fruticosus*, (certainly the present plant) and the *Rubus occidentalis* or wild raspberry, together. They are undoubtedly closely allied in their medicinal virtues, as they are in their botanical structure and habit. I have seen raspberry jam (prepared from the *Rubus idæus* or garden raspberry) used in the manner mentioned above, for the blackberry : but it proved much inferior ; whether the jam and syrup prepared from the wild American raspberry, be more closely allied in its virtues to those made of the blackberry, I know not, but it is worth an experiment. A syrup prepared from the juice of the garden rasp-



berry, is ordered by the London Pharmacopœia, for officinal use. And I think the blackberry of our own country, is deserving of the same attention. I had designed to give in this number a figure of the *Rubus procumbens*, or dewberry, which is closely allied to the plant now under consideration, in a medicinal point of view. I unfortunately, however, let the period of its floescence pass by, and it will consequently be excluded from these two volumes, though I shall not omit to figure it, should the work be continued. What has been said of the root, and of the fruit of the blackberry, however, may very justly be considered as applicable to the root and fruit of the dewberry. Indeed, the two plants are not unfrequently used indiscriminately.

## TABLE XXXIX.

Fig. 1. Represents a flowering branch of the *Rubus villosus*, a specimen having been selected, containing a few flowers. They are often very numerous and form a kind of panicle.

2. Represents the fruit, which is a compound berry, with the acini frequently projecting irregularly beyond the line of the circumference. It must here be remarked, that blackberries are often found, particularly late in the season, smaller, and less oblong, or more globular than this—which, however, is the genuine form of the fruit.





Drawn from Nature by W. P. C. Barton

Tanner Vallanet Kearny & Co. c

HEUCHERA AMERICANA.

( Alum-root. )

## HEUCHERA AMERICANA.

### ALUM-ROOT. AMERICAN SANICLE.

**HEUCHERA Americana.** L. Sp. Pl. 238. Hort. Cliff. 82. Gron. Virg. 29. Roy. Lugdb. 437. Mill. Dict. Knip. Cent. 5. n. 42. Murray, Nov. Com. Gott. vol. iii. p. 66. Herm. Parad. 131. t. 131. Pluk. Alm. 332. t. 58. f. 3. Houttuyn. Pfl. Syst. Lin. v. p. 840. Willd. Sp. Pl. i. p. 1328. Muhl. Cat. 2d. ed. p. 29. Hort. Kew. i. p. 320. Royen. 437. Boerh. i. p. 208. Bart. Col. ed. 3d. par. i. p. 9. par. 2. p. 2. Coxe's Disp. 3d. ed. 350. Dyck. Ed. Disp. 416. Pursh, Fl. Am. Sep. i. p. 187. Mich. Fl. Am. Boreali. i. p. 171. Elliot. Sketch. i. p. 337. Nutt. Gen. Am. Pl. i. p. 174. Bart. Prod. Fl. Ph. 36. Comp. Fl. Ph. i. p. 133. Stoke's Bot. Mat. Med. ii. 41.

### HEUCHERA.

Gen. Pl. 447.

Nat. Syst. Juss. *Saxifragae*.

Nat. Ord. Lin. *Succulentae*.

Artific. Syst. Lin. Classis *Pentandria*. Ordo *Digynia*.



HEUCHERA, L.\* Calix 5-fidus. Petala 5-parva. Stamina 5. Capsula 2-ocularis. Folia *H. Americanae* radicalia et flores in scapo paniculati terminales. *H. Dichotomae* caulis dichotomus et pedunculi 2-flori foliis oppositis axillares.

Juss. Gen. Plant. ed. 1789. p. 308.

*Caps.* 2-ocularis, 2-rostris. *Pet.* five, calici inserta.

*Gen. Ch. Cal.* Perianth of one leaf, with five roundish, narrow, obtuse segments. *Cor.* Petals five, lanceolate, inserted into the margin of the calix, and of the same length with it. *Stam.* Filaments five, awl-shaped, erect; anthers roundish. *Pist.* Germen roundish, cloven half way down, ending in two straight styles, the length of the stamens; stigmas obtuse. *Peric.* Capsule ovate, acuminate, half cloven, of two cells, with two beaks which are reflexed. *Seeds* numerous, small.

*Ess. Ch.* Petals five. Capsule with two beaks and two cells:

HEUCHERA Americana; viscido-pubescens; scapo foliisque aperijsculis, foliis modice rotundato-lobatis dentatis; dentibus dilatatis obtusis mucronatis, pedunculis paniculae tres dichotomis divaricatis, calicibus brevibus obtusis, petalis lanceolatis longitudine calicis, staminibus longe exsertis. *Pursh.*

Viscid and pubescent; scapes naked, thyrsus elongated; radicle leaves on long petioles, with rounded lobes. *Pers.*

#### SYNONYMA.

HEUCHERA cortusa. Mich.

HEUCHERA viscida. Pursh.

CORTUSA Americana. Herm.

MITELLA Americana, flore squallidæ purpureo, villosa. Boerh.

#### PHARM.

HEUCHERÆ Americanæ, *Radix.*

THE genus *Heuchera* was named in honour of John Henry Heucher, professor of medicine in the University of Wittemberg, who was the author of a botanical and some medical publications.\*

According to Pursh there are five species natives of North America; though Dr. Muhlenburg and Mr. Nuttall only enumerate three. *H. Americana* is the only species with which I am acquainted. It is indeed the only one growing in Pennsylvania and Jersey; and it is in this neighbourhood quite common.

The root is horizontal, irregular, knotty, slightly compressed, of a yellowish colour, and an intensely astringent taste. There are no stems. The scapes are numerous from a single root, naked, terete, smooth under the ground, and just where they emerge from it, of a bright carmine colour. Higher up they become very hairy, and of a green colour, frequently attaining a height of two or three feet. The common height is about fourteen inches. The leaves are all radical, cordate, five to seven lobed, having the lobes rounded and toothed, and the teeth garnished with a small point. The flowers are small, borne on a long, loose, terminal and pyramidal panicle or thyrus. Calix five-parted. Petals minute, rose-coloured, inserted

\* He published in 1711, "*Index Plantarum Horti Medici Academiae Wittembergensis*," arranged according to the system of Rivinius. And in 1712, he published a treatise entitled, "*De igne per ignem extinguendo, sive de præstantissimo Camphoræ usu in febribus acutis*."

into the tube of the calix. Filaments more than twice the length of the calix, delicate, yellow, and inserted into the calix. Anthers small, red, globose, two-celled. Germ bifurcated at the summit, and ending in two diverging slender styles. Capsule consists of two long beaks, containing a great number of very small blackish or deep brown seeds.

The whole plant is every where covered with a soft pubescence, which on the branches of the panicles and upper parts of the scapes, is viscid or clammy; and the margins of the leaves are finely fringed. The viscid pubescence caused Pursh to alter the specific name here used, to that of *viscida*. The plant inhabits shady woods, thickets, among rocks, and stony places in fields, near water, seeming always to prefer a moist soil, and one tolerably rich. It is in full flower in May, June, and at this season may be found in every state of the union. Pursh says, it varies with nearly smooth leaves.

#### MEDICINAL PROPERTIES.

The Alum-root, as its name implies, is an astringent; and for this property, which it possesses in an eminent degree, the plant is here figured and described. Little seems to be known, as yet, of its properties, further than this. And it is not used, so far as I know, in Pennsylvania, Jersey or Maryland, as a medicine. It is said by Professor Barton, to be one of the articles of the *Materia Medica* of the

Indians, who use it as a styptic, and in the treatment of obstinate sluggish ulcers.

Dr. Barton further says, "it is the basis of a powder, which has lately acquired some reputation in the cure of cancers."\* In such cases he supposed its efficacy was owing to its astringency.

Of the medicinal virtues of the plant in question, my own personal experience does not entitle me to speak, not having ever employed it in any way. To those who feel inclined to make experiment with native articles of the class of astringents, it may be confidently recommended as worthy of notice.

\* Collections.



## TABLE XL.

Fig. 1. Represents the root, leaves and lower portions of the scapes.  
The petioles are generally of unequal lengths, and often much longer than here represented.

2. The upper portion of a flowering panicle.

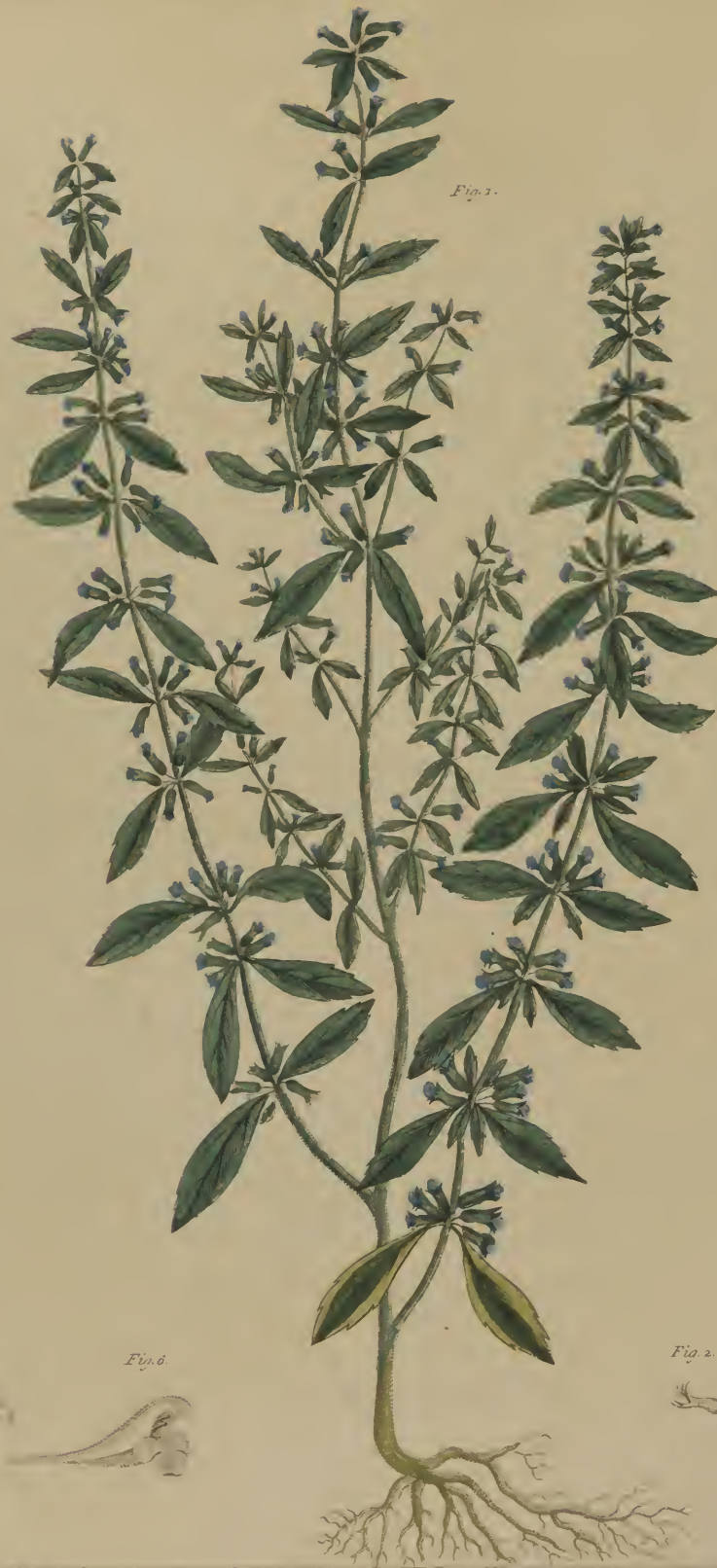
3. A flower separated, of its natural size.

4. The germ and styles.

5. The flowers opened, shewing the stamens and petals inserted into the calix.

6. The same, greatly magnified.





HEDOMA PULEGIODES.  
(Pennycress)

Drawn from Nature by J. Smith

W. H. K. Sculp.

## HEDEOMA PULEGIOIDES.

### PENNYROYAL.

*Germ.* Poleyblattrige Cunile. (*Willd.*)

**HEDEOMA** Pulegioides. *Sp. Pl.* i. p. 593. Sub. *Melissa* Pulegioides. *Sp. Pl.* ii. p. 30.  
Gron. Virg. 167. Kalm. it. ii. p. 314. Houttuyn. *Lin. Pfl. Syst.* v. p. 136.  
Willd. *Sp. Pl.* i. p. 123. Pursh, *Fl. Am. Sep.* ii. p. 414. Mich. *Fl. Am. Boreal.*  
i. p. 13. Muhl. *Cat. Pl. Am. Sep.* 2d. ed. p. 3. Bart. *Prod. Fl. Ph.* 15 and 63.  
*Comp. Fl. Ph.* i. p. 13. Big. *Floru. Bost.* 7. Elliot, *Sketch.* i. p. 27. Nutt.  
*Gen. Am. Pl.* i. p. 16.

### HEDEOMA.

Persoon *Synopsis*, ii. p. 131.

*Nat. Syst. Juss. Labiatae.*

*Nat. Ord. Lin. Labiatae.*

*Artific. Syst. Lin. Classis Diandria. Ordo Monogynia.*

*Cal.* basi gibbus. *Cor.* ringens. *Stam.* 2-sterilia.

**HEDEOMA** pulegioides; pubescens, foliis oblongis serratis, pedunculis axillaribus verticillatis, calicis labio inferiore bisetso setis ciliatis. *Pers.* and *Pursh.*

Pubescent; leaves oblong, serrate; peduncles axillary and verticillate; the lower lip of the calix bisetted; the bristles ciliated. **B.**



## SYNONYMA.

CUNILA pulegioides. Willd. Sp. Pl.

MELISSA pulegioides. Sp. Pl. i. p. 593.

MELISSA floribus verticillatis, glomeratis, secundum longitudinem caulis, foliis tomentosis. Gron.

## PHARM.

HEDEOMÆ pulegioidis, *Herba.*

## DESCRIPTIO UBERIOR.

PLANTA spithamea, brachiata. *Folia* lanceolato-ovata, scabriuscula, uno alterove dente notata: superiora angustiora. *Verticilli* secundum totam longitudinem plantæ. *Bracteae* utrinque binæ floribus majores, præter alias minutas. (Mant.) *Calix* decemstriatus, scaber: L. superiore trifido acuminato, inferiore setaceo. *Corolla* alba, fauce violacea: Lab. superiore vix emarginato. *Stamina* duo, corolla breviora, fertilia, et filamenta alia duo minora castrata. (Willd.)

PENNYROYAL needs but little description, being so universally known. The root is annual, small, branched, fibrous and of a yellow colour. The stem is from nine to fifteen inches high, obscurely angular, but often quite terete, pubescent, and very much branched; branches erect. Leaves small, opposite, lanceolate, or ovate, atten-

uated at the base, into slender petioles, sparsely dentated, prominently veined, particularly beneath, and pubescent. Flowers very small, pale-blue, verticillate on short peduncles. Calix striated and pubescent, having the upper lip divided into two setous, ciliated segments; the lower lip into three larger, and destitute of ciliation.

The flowers appear in July, and the plant continues to bloom till the last of autumn. It is distributed extensively over every part of the United States, growing always on dry, and seems to prefer arid and calcareous soils. It is very abundant by road sides, and is frequently seen growing in the crevices and ruts of turnpikes.

The whole plant gives out when pressed between the fingers or agitated, a strong, pungent and grateful scent, which is extremely reviving and pleasant. Great quantities of the herb are brought to the Philadelphia Market, and vended at a trifling price, for medical purposes; and the ready sale it meets with, proves how extensively it is used in domestic practice.

#### MEDICINAL PROPERTIES.

Pennyroyal is introduced into this work, an account of the high degree of popular confidence it enjoys, as an emenagogue. Whether the herb is entitled to all the reputation it possesses, in producing a return of the suppressed catamenia, I cannot undertake to

say ; but certainly there are few persons who have used it, that do not bear testimony of the efficacy of Pennyroyal tea, as the decoction is usually called, at least in common or slight cases of obstruction, or interruption of the menses. Hot water readily extracts the peculiar warm, pungent and aromatic property of the plant ; and sweetened with honey, molasses, or sugar, it is a grateful beverage. It is generally administered simultaneously with the *pediluvium* ; and, I have always heard, and from many highly creditable sources, with complete success. From what I can learn on the subject, little dependence should be placed on this practice, except in recent cases of suppression. It is well known that the *Mentha Pulegium*, that is, Pennyroyal or Pennyroyal-mint of Europe, has no inconsiderable reputation in similar cases. It must not be forgotten, that the American plant known by the name of Pennyroyal, or wild Pennyroyal, is entirely distinct from the Pennyroyal of Britain, and belongs indeed to a very distinct genus. I have mentioned this fact here, because it appears that some of the writers in the American Dispensatories, seem to speak of them as identical. The same observation applies to a late work on the *Materia Medica*.\*

An infusion of Pennyroyal is said by Kalm, in his travels through this country, to be used by persons who have taken cold, and have pains in the limbs.

I have heard that the *Hedeoma pulegioides* is sometimes given in spirituous tinctures, but I know of no instance in which it has been used. The plant yields an essential oil, for which see Appendix.

\* By Dr. Chapman.

TABLE XLI.

- Fig. 1. Represents an entire plant of a very common size, of the *Hedeoma pulegioides*.
2. The calix, separated.
  3. A front view of a separated flower, the size of nature.
  4. The same, greatly magnified.
  5. A side view of the separated flower.
  6. The same, greatly magnified.









Drawn from Nature by W<sup>m</sup> P. C. Barton.

J. C. Warner del.

CUNILA MARIANA.  
(Dill)

## CUNILA MARIANA.

### DITTANY.

Mountain Dittany. Wild Basil. Mint-leaved Cunila. Maryland Cunila.

CUNILA Mariana. Lin. Sp. Pl. 30. Also, Sp. Pl. i. 568. Gron. Virg. 64. Ed. n. 88.  
Schoepf, Mat. Med. Am. 5. Hort. Kew. i. 31. Mich. Fl. Boreali-Am. i. 13.  
Vahl. enum. i. 213. Pluk. Mant. 34. t. 344. fol. 35. pl. 1. Hist. ox. iii. 413.  
s. 11. t. 19. f. 7. Stokes's Bot. Mat. Med. 1. 43. Pursh, Fl. Am. Sep. ii. 406.  
Muhl. Cat. Pl. Am. Sep. ed. 2d. p. 3. Elliot's Sketch. i. p. 27. Bart. Prod.  
Fl. Ph. 15. Comp. Fl. Ph. i. p. 13. Nutt. Gen. Am. Pl. i. 15.

### CUNILA.

Gen. Pl. 35. Schreb. 46.

Nat. Syst. Juss. *Labiatae*.

Nat. Ord. Lin. *Verticillatae*.

Artific. Syst. Lin. Classis *Diandria*. Ordo *Monogynia*.

CUNILA, L.\* Coniele. *Calix* cylindricus 10-striatus 5-dentatus. *Corolla* bilabiata, supe-



rius erecta plana emarginata, inferius 3-loba. *Semina* intrà calicem villis clausum. Flores corymbosi aut verticillati, axillares and terminales.

Juss. Gen. Plant. ed. 1789. p. 111.

*Cal.* cylindricus, 5-dentatus, fauce villosus. *Cor.* ringens: labio superiore erecto, plano, emarginato. *Stam.* 2-sterilia.

*Calix* cylindrical, 10-striate, 5-toothed. *Corolla* ringent, with the upper lip erect, flat, and emarginate. *Stamens* 2-sterile. The two fertile stamens with the style exerted, nearly twice the length of the corolla. *Stigma* unequally bifid. *Seeds* four. *Nutt.*

Gen. Ch. *Cal.* Perianth one-leafed, cylindrical, striated, with five somewhat unequal teeth, permanent. *Cor.* one-petalled, ringent; upper lip erect, flat, emarginate; lower lip three-parted; segments rounded, middle one emarginate. *Stam.* Filaments two, fertile, two without anthers; anthers roundish, didymous. *Pist.* Germ superior, four-parted; style filiform; stigma bifid, acute. *Peric.* The calix closed at the throat with shaggy hairs. *Seeds* four, egg-shaped, minute.

Ess. Ch. Calix five-toothed, corolla ringent; upper lip erect, flat. Two of the filaments barren. Seeds four.

CUNILA Mariana; foliis ovatis serratis sessilibus, corymbis terminalibus dichotomis.

*Willd. and Pursh.*

Leaves ovate, serrate, sessile; corymbs terminal, dichotomous.

#### SYNONYMA.

SATUREJA origanoides. Sp. Pl. 1. 568. Gron. 88. ed. 2d.

THYMUS, &c. Gron. 64. ed. 1.

CALAMINTHA mariana mucronatis rigidioribus, &c. Pluk. Mant.

CALAMINTHA erecta Virginiana, &c. Hist. ox.

PHARM.

CUNILE Marianæ. *Herba.*

QUAL. Fragrans, spirans, odore ocymum referens.

VIS. excitans, nervina.

USUS. febres intermittentes; cephalalgia; succus expressus cum lacte ad morsura serpentum. *Schoepf.*

DESCRIPTIO UBERIOR.

RADIX fibrosa perennis. Caulis acute quadrangulatus, ramosus, fulvus. Folia subsessilia, ovata, acuta, serrata basi sub-cordata subtus pallida. Corymbi terminales et axillares dichotomis, pedicellis capillaribus, bracteolis linearibus. *Cal.* cylindric, five-fidus, laciniis brevibus æqualibus acutis; 10-striatus, pilis nitentibus. Os calicis villosum: semina quatuor. Habitat in montosis siccis, et sylvis aridis umbrosis, florens Julio.

THE genus\* to which this handsome little plant belongs, is peculiar to America; and it contains properly, now that *Hedeoma* is separated from it, only the single species here figured—the second species, *C. capitata* of Vahl, being more nearly allied, it is said, to *Ziziphora*.

The root of dittany is small, fibrous and yellowish, resembling that of the common pennyroyal. The stem is delicate and slender, four-

\* *Cunila* is the *κονίλη*, of Plin. Nicand.

sided, very smooth, much branched, and of a reddish-yellow, rarely purplish colour. The branches are given off opposite, or nearly so, to each other. The leaves are small, punctated, sub-sessile, opposite, ovate, acute, round-cordate at base, sharply serrated, of a dry texture, and waved on the margin and disk. They are very glabrous above, and of a fine green colour, and bluish-green, on their under surface. Flowers numerous, in terminal and sometimes axillary dichotomous corymbs, situated on short, filiform, yellow or reddish peduncles. Calix striated. Corolla bluish-purple. Mr. Elliot describes it as white in the mountains of Carolina. Stamens and style exserted, twice the length of the corolla. Stigma bi-cleft, and didymous. The time of flowering is from July to the last of September.

The dittany is always found on dry soils, in shady and hilly woods, and, in the southern states chiefly inhabits mountainous tracts of land.

#### MEDICINAL PROPERTIES.

The earliest notice of the medicinal virtues of dittany, is in the work of Schoepf, who describes it as a stimulant and nervine, and as useful in intermittent fevers; in head-ache; and the expressed juice with milk as an application to the bites of serpents. At the time that Schoepf wrote, this country was more uncultivated than

now, and the bites of venomous serpents more frequent. Hence the country people resorted to a variety of plants for the purpose of healing those bites, and preventing their injurious effects on the system. It appears, that among other supposed specifics, the dittany was considered as useful. As, however, the properties of the plant are not sufficiently active to promise any good in such cases, this part of his account may be passed over. Of its use in intermittents, I know nothing ; but in slight fevers and colds, the dittany tea is much used, as I know from observation and enquiry, with a view to excite perspiration. It still retains a considerable share of popular confidence as a nervine, being frequently resorted to, to relieve nervous head-achs, and various hysterical affections. I have never used, nor prescribed dittany tea ; but as a warm, grateful, refreshing, and slightly stimulating *tisan*, it may be safely recommended. Mr. Elliot says, an infusion of the leaves of this plant is often given in the southern states, in fevers, with a view to excite perspiration. The dittany belongs to the class of stimulating, warm, and grateful aromatics, which comprises the mints, the monardas, and pennyroyal ; and does not, probably, differ essentially in medicinal virtues, from any of these.



## TABLE XLII.

Fig. 1. Represents a flowering specimen, broken off a few inches above the root, of *Cunila Mariana*.

2. A flower, separated.

3. The corolla, opened.

(All the size of nature.)





LOBELIA CARDINALIS.  
(Cardinal Plant.)

## LOBELIA CARDINALIS.

### CARDINAL PLANT. CARDINAL FLOWER.

*Germ.* Die rothe Kardinals blume.

*Dutch.* Kardinaals bloem.

*Engl.* The Scarlet Lobelia, or Cardinals' Flower.

*French.* Lobelie Cardinale; La Cardinale.

*Ital.* Fior Cardinale: Cardinalizia.

*Span.* Escurripa.

*Port.* Cardealina.

**LOBELIA** *cardinalis*. L. Hort. Cliff. 426. Hort. Ups. 276. Roy. Lugdb. 421. Gron. Virg. 134. Mill. Dict. n. 1. sub. Rapuntio. Kniph. Cent. 4. n. 42. Knorr, delic. ii. t. L. 2. Moris. Hist. ii. p. 466. s. 5. t. 5. f. 54. Hern. Mex. 879. t. 880. Houttuyn. Lin. Pfl. Syst. x. p. 65. Willd. Sp. Pl. tom. 1. par. 11. p. 944. Mich. Fl. Boreali-Am. vol. ii. p. 151. Pursh, Fl. Am. Sep. vol. ii. p. 448. Bot. Mag. 320. Rob. ic. 137. Knorr, delic. ii. t. L. 2. Bart. Comp. Fl. Ph. vol. ii. p. 62. Muhl. Cat. 2d ed. p. 22. Nutt. Gen. Am. Pl. vol. ii. p. 77. Drake, Pict. Cin. p. 87. Schoep. Mat. Med. Am. p. 128. Bart. Collections, ed. 3d par. 1. p. 40. Hort. Kew. iii. p. 284. Cutler, in Am. Acad. i. p. 484. Rupp. al. Hall. p. 248. Park. Parad. t. 355. f. 6. Stokes, Bot. Med. vol. i. p. 344.



## LOBELIA.

Gen. Pl. 1363.

*Cal.* 5-fidus. *Cor.* 1-petala, irregularis, sæpius fissa. *Caps.* infera, 2-3-locularis.

*Calix* 5-cleft. *Corolla* monopetalous, irregular, on the upper side cleft nearly to its base. *Stamina* united into a tube. *Stigma* 2-lobed; involucrate; involucre (or indusium) bearded. *Capsule* inferior or semisuperior, 2 or 3-celled, opening at the summit. *Seeds* minute, scabrous.

**OBS.** Suffruticose, shrubby, rarely arborescent, most commonly herbaceous; leaves alternate; flowers minutely bi-bracteolate, solitary and axillary, or terminal and racemose; raceme bracteate; flowers bilabiate, 5-cleft, upper lip cloven, segments linear, lower trifid, laciniae ovate or obovate, palate channelled or bidentate, often bimaculate. Tube of the anthers curved at the summit, bearded and perforated, at length admitting the egress of the stigma. Colour of the flowers scarlet, fulvous, or more commonly blue. *Nutt.*

Nat. Syst. Jussieu. *Lobeliaceæ*. (Ann. du mus.)

Nat. Ord. Lin. *Campanaceæ*.

Artific. Syst. Lin. Classis *Monadelphia*. Ordo *Pentandria*.

**LOBELIA** *cardinalis*; erecta, simplex, pubescens; foliis ovato-lanceolatis, acuminatis, eroso-denticulatis, racemo subsecundo multifloro, genitalibus corolla longioribus. *Willd.* and *Pursh.*

## SYNONYMA.

*Rapuntium galeatum Virginianum coccineo flore majore.* *Moris.*

*Rapuntium maximum coccineo spicato flore.* *Herm. Max.*

*Flos cardinalis Barberini.* *Cal. ap. Hern.*

*Trachelium Americanum.* *Park. Parad.*

*Lobelia coccinea.* *Stokes.*

PHARM.

LOBELIÆ cardinalis, *Radix.*

FEW native plants equal in beauty this gaudy flower. Indeed, it is far more showy and elegant than a multitude of exotics so industriously cultivated. Wherever seen, it is greatly admired, and perhaps it only requires to be generally known, in order to obtain a high station in the catalogue of favourite plants.

It is a native of all our marshes and meadows, from one end of the union to the other; and in the autumn, the season of its flowering, it decorates them with its beautiful, long-blooming carmine flowers, forming a gorgeous contrast with the showy blue flowers of its congener, the *L. siphilitica*. Pursh describes a white variety.

The root resembles that of many species of the genus, as the *inflata*, *siphilitica*, *Claytoniana*, &c. It is perennial, whitish-yellow, fibrous, of a nauseous pungent taste, affecting the fauces in a manner similar to that of the *inflata*, producing a taste resembling that of tobacco. The stem is erect, pubescent, simple, from two to four feet high, terminating in a long spike of brilliant carmine-coloured flowers, those towards the top coming into bloom successively after the lower ones have decayed, so that the plant continues a long time in flower. The leaves are broad-lanceolate, of a fine shining green,

and erosely denticulate on the margin. The period of flowering is from the last of July till September, during which time it may be abundantly found in marshes, low meadows, the borders of rivulets, springs, and in watery thickets, in every state in the union.

#### MEDICINAL PROPERTIES.

This acrid, lactescent plant, is introduced in this work on account of its reputed efficacy as an anthelmintic. Little, however, seems to be known with certainty, of its powers ; the chief claim it has to notice as a medicine, being derived from the circumstance of the Cherokee Indians using it successfully to expel worms. The earliest notice of it which has met my eye, is to be found in the valuable little work of Schoepf. That writer intimates that it has been used in the same manner as the *L. siphilitica*, in siphilis ; and though this circumstance may not add to its medical importance, it evinces an early impression of the activity of the plant, and of a similarity in its virtues, to those of the better known species just alluded to. Dr. Drake has enumerated the Cardinal Plant among the anthelmintic vegetable productions of Ohio : but he does not say whether he has ever used it, or ever seen it employed with a view to such an effect on the system. Of the medicinal powers of this plant, I am not able to state any thing from my own experience ; but am of opinion that its sensible properties, its reputed powers, and the well known activity of the genus to which it belongs, fully entitle it to further notice.

TABLE XLIII.

Fig. 1. Represents the upper portion of a flowering specimen of *Lobelia cardinalis*, the size of nature.

2. An outline of one of the lower leaves, which are largest towards the root, and gradually lessen in size as they are situated higher up on the stem.

3. A flower separated.

4. The petals removed, shewing the column of stamens, and pistil with the calix.

5. The stamens removed, exhibiting the pistil. The filaments are carmine, and the anthers lead-blue.









Drawn from nature by W. C. Cavan.

Engraved by J. H. Kearney & Co.

CHENOPodium ANTHELMINTICUM.  
(Jerusalem Oak)

## CHENOPODIUM ANTHELMINTICUM.

### JERUSALEM OAK.

Worm-seed. Worm Goose-foot.

*Germ.* Der wurmtreibender Gänsefuss; wurmsamen, wurmmelde; wurmmelte.

*Dutch.* Wurmdryvend ganzevoet. Wurm-melde.

*Engl.* Shrubby Goose-foot.

*French.* L'Anserine vermifuge. Ansérine anthelmintique.

*Portu.* Chenopodio vermifugo.

*Span.* Anserina anthelmintica. Ceniglo antelmentico.

χηνοποδιον ελμινταγωγον.

*CHENOPODIUM anthelminticum.* Kalm, *Canad.* ii. p. 283. *Mat. Med.* p. 73. *Dill.* *elth.* 77. t. 66. t. 76. *Houttuyn.* *Lin. Pfl. Syst.* 5. p. 809. *Willd.* *Sp. Pl.* vol. i. p. 1304. *Pursh,* *Fl. Am. Sep.* vol. i. p. 198. *Lin. Sp. Pl.* 320. *Mat. Med.* 190. *Amœn. Acad.* iv. p. 532. *Clayton,* *Virg.* 145. *Gron. Virg.* ed. n. 39. *Schoepf,* *Mat. Med. Am.* p. 31. *Barton's Cullen,* vol. ii. p. 414. *Drake's Pict. Cincin.* p. 87. *Nutt. Gen. Am. Pl.* vol. i. p. 199. *Thacher's Disp.* 3d ed. p. 180. *Dyck. Edin. Disp.* p. 226. *Wilkins, Med. Mus.* vol. v. *Coxe's Disp.* 3d ed. p. 258. *Muhl. Cat. ed.* 2d p. 28. *Barton's Collec. ed.* 3d, par. 1. page 39 and 63. *Chapman's Therap. and Mat. Med.* vol. ii. p. 70. *Bart. Comp. Fl. Ph.* vol. i. p. 149. *Flore Medicale François.* *Elliott, Flor. Can. and Georg.* vol. i. p. 331. *Walt. Fl. Car.* p. 111. *Mich. Fl. Boreal. Am.* i. p. 173. *Hort. Kew.* i. p. 313. *Berg.* p. 177. *Merry,* account from, in *Chir. Rev.* xviii. par. ii. *Murray,* iv. p. 275. *Chalm.* i. p. 71. *Stokes, Bot. Mat. Med.* ii. p. 19.



## CHENOPODIUM.

Gen. Pl. 435.

Nat. Syst. Juss. *Atriplices*.Nat. Ord. Lin. *Oleraceæ*.Artific. Syst. Lin. Classis *Pentandria*. Ordo *Digynia*.*Sem.* 1-lenticulare, superum. *Cal.* 5-phyllus, 5-gonus.*Calix* 5-parted, with 5-angles. *Corolla* none. Style bifid (rarely trifid.) *Seed* 1-lenticular, horizontal, covered by the closing calix.—Leaves alternate, often angular in the outline. Flowers glomerate, paniculate. *Nutt.*

CHENOPODIUM anthelminticum; foliis ovato-oblongis, dentatis, racemis aphyllis.

Leaves oblong-lanceolate, sinuate and dentate, rugose; racemes naked; style one, 3-cleft. *Elliot.*

## SYNONYMA.

CHENOPODIUM lycopi folio, perenne. *Dill.*BOTRYS præalta frutescens, &c. *Clayt. and Gron.*

## PHARM.

CHENOPODII anthelmintici—Herba, succus spissatus, semina, ol. essential.

THIS is a very common looking plant, of repulsive habit, and excessively disgusting odour. It closely resembles two or three species

of the same genus,\* and has been confounded, especially with one, the *Chenopodium ambrosioides*, from which it is difficult for common observers to distinguish it. The root of Jerusalem oak is perennial. The stem is herbaceous, upright, very much branched, deeply grooved, and from two to four, or five feet high. It is said by some to exceed this stature, though it has not happened to me to meet with it more than three feet high. The leaves are arranged alternately, and somewhat irregularly; are sessile, very conspicuously veined, of a yellowish-green colour; and, under a lens, covered on their under surface, with terebinthinate globular dots. The flowers, as in most of the species, are very small and numerous, being borne on long, axillary, dense, leafless spikes. One of the principal characteristics of this plant is discoverable in this leafless structure of the spikes; and in this respect it differs remarkably from the *C. ambrosioides*, with which it is so frequently confounded. The calix is monophyllous, five-cleft, persistent, shewing the stamens conspicuously beyond the extremities of the teeth. Filaments white, anthers yellowish-white. Style trifid. The flowers of this plant appear in the beginning of July, and continue till the last of August. I have, however, sometimes found flowering specimens as late as September.

Its favourite haunts are in loose soils, near rubbish and fences. It is, however, not so common a plant as either of the other species, in the middle and northern states. To the south it appears to be fre-

\* *Chenopodium* is derived from  $\chi\eta\nu$ , ( $\chi\eta\nu\sigma$ ), and  $\pi\omicron\upsilon\varsigma$ , ( $\pi\omicron\delta\omicron\varsigma$ .) *Anserine* derived from *anser*, a goose; hence the name goose-foot.

quent and abundant, and to acquire a greater size than here. Pursh says this species "grows plentifully in the streets of Philadelphia."—He must certainly, in this instance, have observed carelessly, else he would have ascertained that it is the *Chenopodium ambrosioides* which is so common in our streets, by the gutter ways, and in the suburbs on vacant lots among rubbish. The late Professor Barton always considered that plant the *C. anthelminticum*, as did Pursh.—The least attention, however, to the characters of the two species, will prove that they have both erred in this instance. The odour of the *C. ambrosioides*, is different from that of the plant under notice. It is much less subtle, pungent and disagreeable, and does not continue so powerful on the dried plant as in the other species.

#### MEDICINAL PROPERTIES.

The very peculiar odour emanating from every part of this plant, I have already noticed, with a view to point out the distinction between it and the *ambrosioides*. This odour is so disgusting, that it seems in some measure to detract from the value of the article as a medicine, because of the difficulty of inducing children to swallow any preparation from it. It has been compared to the odour of valerian; which, however, is much more tolerable. The whole plant and the seeds, are alike imbued with the peculiar scent. The medicinal

preparations are—the expressed juice; the bruised seeds, in an electuary; a decoction of the leaves in milk; and an essential oil, extracted from the seeds. The latter is the most common form of administering the article; and, as it conveys the essential properties of the plant in the smallest bulk, seems to be entitled to a preference to the other methods. In whatever manner it be given, the effect looked for, is an expulsion of worms from the alimentary canal. The anthelmintic virtues of this species of goose-foot, were early noticed by Kalm, Clayton, Schoepf, and others, and are now very generally acknowledged, so that the article constitutes one of the legitimate catalogue of medicines. It is conspicuously noticed in all our dispensatories and works on *Materia Medica*; and is undoubtedly very estimable.

The essential oil, under the name of *worm seed oil*, enjoys a great share of popular favour, and hence has unfortunately been an object of a very reprehensible cupidity in the adulteration of it. A spurious kind of oil is sold under the above name, which appears to be made from the *Chenopodium ambrosioides*, with the addition of a considerable proportion of turpentine spirit. This preparation is inefficacious as an anthelmintic, and is easily known by the absence of the very remarkable odour of the true plant, and the oil prepared from its seeds.

Of the expressed juice of the recent leaves, a table spoonful is re-



commended to be given on an empty stomach morning and evening, repeating the dose till worms be discharged. A wine glass full of the decoction of the plant in milk, in the proportion of a handful of the leaves to a quart of milk, is the dose for a child; and when the oil is administered, from five to eight or ten drops may be given to a child two years old on a lump of sugar, and this continued twice or thrice a day for three days; a mercurial purge is then to be given. If the effect be not produced, and worms be still suspected to exist, the same plan is to be pursued till successful. In this manner I have used this article, and found it efficacious, producing a full discharge of worms; but have not had it in my power to try it in any other form. M. Biètte says, it is given in France, in marmalade or beer, as a vermifuge; and Chalmers particularly recommends an electuary prepared with the pulverized seeds, mixed with honey. Of this a table spoonful morning and night for three successive days, is the dose he recommends for a child.

TABLE XLIV.

Fig. 1. A flowering specimen, the size of nature, of *Chenopodium anthelminticum*.

2. A flower, greatly magnified.

3. The fruit enveloped by the calix, magnified.

4. Three seeds, the size of nature.

5. A seed, greatly magnified.









PANAX QUINQUEFOLIUM  
L.

## PANAX QUINQUEFOLIUM.

### GINSENG.

*Germ.* Fünfblättrige Kraftwurz, Kraftwurzel.

*French.* Ginseng.

*Chin.* Jin-chen

*Japan.* Nindsin; dsindsom.

*Tartare.* Mandchon Orkoda.

*Iroquois.* Garent-oquen.

*Danish.* Ginseng, ginsem.

*Portu.* Ginsano.

*Spanish.* Jin-seng.

PANAX quinquefolium. L. Sp. Pl. 1512. Gron. Virg. 147. Mat. Med. 222. Kalm, it. iii. p. 334. Mill. Dict. n. 1. Blackw. t. 513. Regn. Bot. Mich. Am. ii. p. 256. Lafit. Ginseng. 51. t. 1. Catesb. Car. iii. p. 16. t. 16. Vaill. Sex. 43. Trew. ehret. t. 6. f. 1. Houttuyn. Lin. Syst. Pfl. x. p. 333. Pursh, Fl. Am. Sep. vol. ii. p. 191. Catesb. Car. iii. t. 16. Bot. Mag. 1333. Woodville, Med. Bot. i. t. 58. Breynius, Prod. p. 52. Sarrasin, Hist. Acad. 1718. Bourdelin, Hist. de l'Academie, 1797. Jartoux, in Phil. Trans. xxviii. p. 237. Osbeck, China, p. 145. Barton's Cullen. Mat. Med. vol. ii. p. 115. Heberden, Med. Trans. vol. iii. p. 34. Nutt. Gen. Am. Pl. vol. i. p. 176. Muhl. Cat. ed. 2d p. 101. Bart. Comp. Fl. Ph. vol. i. p. 136. Coxe's Disp. ed. 3d, p. 467. Raii. Hist. p. 1338. Cutler, in Am. Acad. i. 492. Fothergill, J. in Gent. Mag.

xxiii. p. 209. Geoffr. ii. 115. Hill. 589. Stokes's Bot. Mat. Med. ii. p. 157. Lewis, i. 467. Disp. by Duncan, p. 269. Monro, iii. 119. Ratty, p. 219. Spielm. p. 357. Vog. p. 219. Dale, p. 235. Pearson, R. ii. p. 193. Mur. i. 330.

## PANAX.

Gen. Plant. ed. Schreb. n. 1604.

Nat. Syst. Juss. *Araliæ*.

Nat. Ord. Lin. *Hederaceæ*—later botanists, *Umbellatæ*.

Artific. Syst. Lin. Classis *Pentandria*. Ordo *Trigynia*. According to Willdenow and others, *Polygamia Diœcia*.

*Umbella* simplex. *Bacca* cordata, 2-sperma. *Polygama*. Pursh.

*Hermaph.* umbella. *Cal.* 5-dentatus, superus. *Cor.* 5-petala. *Stam.* 5-styli 2. *Bacca* disperma infera.

*Masculi.* umbella. *Cal.* integer. *Cor.* 5-petala. *Stam.* 5. Willd.

*Flowers* polygamous; umbel simple. *Calix* 5-toothed. *Corolla* of 5-petals. *Berry* inferior, subcordate, 2, sometimes 3-seeded. *Calix* in the male flower entire.

Nutt.

**PANAX** quinquefolium; radice fusiformi, foliis ternis quinatis, foliolis ovalibus acuminatis, petiolatis, serratis.—Willd. and Pursh.

Root fusiform, leaves ternate and quinate, leaflets oval, acuminate, petiolate, serrate.

## SYNONYMA.

**AURELIANA** Canadensis. Lafiteau and Catesby.

**ARALIASTRUM** quinquefolii folio, (majus ninsin vocatum.) Vaill.

**ARALIASTRUM** foliis ternis quinquepartitis. Trew.

**ARALIA** Canadensis. Tourn.

## PHARM.

PAN. quinquefol. *Radix.*

THE root of *Panax quinquefolium* is about three or four inches in length, and usually of the thickness represented in the plate. It is of a whitish-yellow colour, and consists of one, two, or three tap-shaped portions. It is wrinkled transversely by parallel rugæ or lines, and the whole surface is covered with small, whitish radicles. It is perennial; and each year's stalk leaves, after dying away, an angular mark, as represented in the upper portion of the root figured, where these marks are numerous. It is generally deep-seated in the ground; and growing most commonly at the roots of trees, is not very easily obtained. The stem is erect, terete, green below, but tinged with purplish-red towards the end, whence the petioles arise. These are three in number, diverging in a regular manner, having the flower-stalk situated in the fork, produced by the union at their base with the top of the stem. The petioles are about two or three inches long, round, and as in the genus *Aralia*, swelling into a kind of knob at their base, where they have a slight motion with each other, and support three compound leaves. The leaflets are mostly five in number, but sometimes only three on one of the petioles, as represented in the plate. I have not seen any specimens with seven leaflets, though botanists state that they are sometimes met with. They are ovate, acuminate, doubly serrate, deep green above,



paler underneath, and smooth on either side ; they are supported by partial footstalks, from a quarter to half an inch in length, flattened and grooved, and tinged with red at the point of union with the general footstalk. The flowers are very small, and borne in a globose umbel on a peduncle, at first short, but afterwards becoming elongated as the flower advances towards fruit : and when the fruit is finally ripe, it attains the length represented in Fig. 7. The involucre consists of numerous, small, yellowish, pointed leaves, which become reddish when the fruit is mature. The calix is cut into five sharp teeth, and is persistent, being generally found on the apex of the ripe berry. The corolla is white, consisting of five oval, fugacious petals. The stamens in perfect flowers are five in number, crowned with heart-shaped anthers ; and the pistils consist of an irregular, inferior, oblong or cordate flattened germ, and two persistent arcuate styles ; though occasionally there are three styles, and often but one will be found ; in which case the berry will become single, and irregularly shaped, as shown in some of those in Fig. 7. The berries are of a fine vermillion colour, commonly reniform, with an apex or crown, as exhibited in the upper berries of the group in Fig. 7. and, as there represented, the inner flowers are but just expanded, while the immature or green berry, and the ripe fruit are to be found on the same stalk. It is not uncommon to find abortive or barren flowers.

Ginseng is not a common plant in the northern and eastern states

of the union. It is much more frequent in the western states, always, however, being thinly scattered over a large tract of country. It delights in rich, shady, mountainous regions, where it retires to the deepest recesses of shade and protection, and, as already mentioned, is generally found near the roots of trees. In the vicinity of Philadelphia, it is certainly a rare plant: yet I have been successful in finding it both on the high rocky banks of the Wissahickon creek, under deep shade, and in the unbrageous woods above the falls of Schuylkill on the west side, where it grows in company with other rare plants, as *Dentaria diphylla*, *D. concatenata*, *Caulophyllum thalictroides*, *Triosteum perfoliatum*, *Viola Pennsylvanica*, *Orchis spectabilis*, *Obolaria Virginiana*, &c. The specimens from which the figure was made, I collected, the flowering one in July, and the fruiting one in September last, at which time I found five individuals of this scarce plant within a quarter of a mile of each other.

The root of this plant is the celebrated Ginseng of the Chinese, which has, till within a few years past, constituted an article of extensive and profitable commerce to the inhabitants of North America. It is not, however, now exported to China, owing either to the quantities obtained in that country, or to some fancied deterioration in the article; and I have been informed by a supercargo, that a quantity carried out to Canton a year or two since in a vessel in which he sailed, was thrown overboard on their arrival there, to avoid pay-

ment of duties, which exceeded the price the article could command.

Ginseng was formerly considered as the peculiar production of Chinese Tartary, and was not, until the enquiries and investigations of M. Sarrasin,\* Lafiteau,† Bartram,‡ and Kalm,§ discovered to exist in North America. The high value of this article in China, and the virtues it was reputed to possess, rendered it a subject worthy of enquiry, whether the plant found in this country was identical with the Tartarian species. Accurate examinations of the two plants, in comparison with each other, soon satisfied botanists of their identity; and the Chinese have long accredited the roots of our *Panax quinquefolium*, sent to them for consumption, as the veritable Ginseng of Tartary. Accordingly they eagerly purchased it from us, and hence it became an article of extensive traffic with them. Those roots were found to meet with the readiest sale, which were clarified after the manner used in China, to purify or render it transparent.

The most authentic account we have of the Eastern plant which produces the esteemed Ginseng of the Chinese, is by Father

\* See Memoirs of the French Academy of Sciences, 1718, where this writer has given a copious account of American Ginseng.

† A Jesuit and missionary among the Iroquois of this country.

‡ John Bartram.

§ Travels.



Jartoux, a missionary at Peking, who was licensed to make a journey through the mountains of Chinese Tartary, with a view to acquaint himself with the plant, and the manner of collecting and preparing it. According to this writer, it is found in greatest abundance between the 39th and 47th degree of north latitude, inhabiting the sides of deeply shaded mountains, and the banks of streams of water, and near the roots of trees. In all the situations where he met with it, it seemed to court the deepest shade. The Emperor of China monopolises the privilege of collecting all the Ginseng in his dominions, and with a view to preserve his right unmolested, he encloses and guards with great vigilance, whole provinces. Notwithstanding the rigorous punishments inflicted on those who venture to infringe his right of collecting this precious herb, the inhabitants frequently enter the interdicted tract of country in vast numbers, and load themselves with the roots of *Panax*, carrying with them for subsistence, during a long time, nothing but parched millet, and sleeping on the bare ground. From those employed by the Emperor himself to collect the roots, he expects a gratuitous portion, of two ounces of the best procured, from each individual; and pays for all above this quantity its weight in silver. This plan insures him an annual receipt of 20,000 Chinese pounds at about one-fourth of its real value in the market. The collectors steep the roots in a decoction of rice or millet, scour them with a brush, and then expose them to the fumes of the boiling liquor by placing them on sticks above it, till they become dry with a



semi-transparency, or resembling horn. The yellow colour so much valued by the Chinese in this root, is acquired during this process. When dried by fire or the sun's rays, the roots are equally good, but destitute of the yellow colour.

#### MEDICINAL PROPERTIES.

As it is from the Chinese we first learned the medicinal virtues of Ginseng, it may be proper to specify the effects they attribute to it, previously to giving an opinion as to its real powers. It is almost impossible to conceive of a substance capable of producing a series of more beneficial effects, on the human system, than those which the fashion, prejudice, or caprice of the Mandarins ascribed to the Ginseng. The Chinese physicians have, it is said by Jartoux, written volumes on the root, in praise of its various extraordinary powers, and it forms the base or chief ingredient in all their prescriptions for the highest classes of the population, and is never or rarely administered to the poor, because of its high price\* as has already been stated. They consider it as a sovereign remedy in all the diseases incidental to their climate and country; and yield no confidence to any medicine which is not combined with it. They say it gives instantaneous relief in cases of excessive mental or corporeal

\* The price at Pekin, is said to have been eight or nine times its weight in pure silver, and sometimes more; according to Kalm, the price at Quebec, in 1748, was five to six livres a pound. The profit in China, must therefore have been immense.

fatigue, attenuates and dissolves humours, facilitates difficult respiration, invigorates the stomach and digestive organs, sharpens the appetite, allays vomiting, cures hypocondriacal, nervous, and hysterical affections, confirms the tone of the healthy system, and renovates the wasting and faded powers of senility,—in fact, that it is a perfect panacea. Hence, the name of *Panax*, given to it by Linnaeus, a term intended to express this catenation of important virtues.\* The Chinese, besides chewing it, use it in decoction, in the proportion of a drachm of the root boiled a long time in a covered vessel, containing a sufficiency of water for a dose. They again add water, and boil it a second time to extract all the virtues of the precious drug.

It appears from Father Jartoux's account,† that he himself

\* Among other visionary effects ascribed to it, it is not surprising that they should believe it to be an aphrodisiac. Writers on the *Materia Medica*, among whom, Cullen is conspicuous, deny that the root has any such effect on the system: and this author, in expressing his discredit of their accounts on the subject, says, he knew a gentleman advanced in years, who chewed a quantity of the root every day, for several years, but could perceive no aphrodisiac effect. *Cullen, Mat. Med.*

† “No body can imagine that the Chinese and Tartars would set so high a value upon this root, if it did not constantly produce a good effect.”—“I observed the state of my pulse, and then took half of a root raw; in an hour after, I found my pulse much fuller and quicker; I had an appetite, and found myself much more vigorous, and could bear labour much better and easier than before. But I did not rely on this trial alone, imagining that this alteration might proceed from the rest we had that day; but four days after, finding myself so fatigued and weary, that I could scarce sit on

could not withhold his credence from their extravagant tales ; but the experience of other Europeans, does not by any means coincide with his statement. They, on the contrary, believe it possesses little medicinal worth ; and refer the numerous beneficial effects ascribed to it by the Chinese, to the imagination of a people remarkable for their prejudices, civil, moral and religious. As a proof of this it may be mentioned, that they set a higher value upon those roots which have a fancied resemblance to the human form, (as in the root figured in our plate) and ascribe greater powers to them than to those of different shapes. The Chinese name, and that given it by the North American Indians, have both reference to this fancied *figure of a man*. If Ginseng be admitted into the *Materia Medica*, it must be arranged with demulcents, being nearly allied to liquorice. It will be perceived, on chewing the root, that the first impression on the palate is that of a saccharine substance : and on further mastication it is somewhat mucilaginous and slightly bitter, with a little aromatic flavour. It has little or no odour. According to Lewis, it is much sweeter and more grateful than roots of fennel, which it is said to resemble ; and differs remarkably from those roots, in the nature and pharmaceutic properties of its active principles ; the sweet matter of the Ginseng being preserved entire in the watery as well as in the spirituous ex-

horseback, a Mandarin who was in company with us, perceiving it, gave me one of these roots ; I took half of it immediately, and an hour afterwards, I was not the least sensible of any weariness. I have often made use of it since, and always with the same success. I have observed also, that the green leaves, and especially the fibrous parts of them, chewed, would produce nearly the same effect." *Phil. Trans.* vol. xxviii. p. 239.

tract; whereas, that of fennel roots is destroyed or dissipated in the inspissation of the watery tincture. He further remarks, that the slight aromatic impregnation of the Ginseng is in a great measure retained in the watery extract, and perfectly so in the spirituous.\*

This root may likewise be considered as a gentle and innocent stimulant, producing stomachic effects, and with this view it may be safely and perhaps quite advantageously used. It is not uncommon to use it as a masticatory: and referring to the effects on the stomach, this cannot be esteemed an injurious article.

Alcohol precipitates a gummy mucilage from its solution in water. It contains no resin nor tannin. The extract is said to be a good preparation for medicinal purposes, and is recommended by Dr. Fothergill as a demulcent in the *tupis senilis*, or tedious chronic cough of old people.

\* Mat. Med. p. 325.



## TABLE XLV.

- Fig. 1. Represents an entire plant of Ginseng, severed from the root, of the size of nature.
2. The root—this is a common form—sometimes there are three fusiform processes, and often two or three such roots as here figured, connected together.
3. A fertile flower, with an involucrate leaf appended to the pedicel, much magnified.
4. A barren flower, also magnified.
5. A stamen.
6. The calix, with the stamens and styles visible above.





ZANTHOXILUM ARMATUM.

(Parsley-leaved Yellow-Peat or Yellow-Wood.)

## ZANTHORHIZA APIIFOLIA.

PARSLEY-LEAVED YELLOW-ROOT, OR YELLOW-WORT.

Shrub Yellow-root.

*Germ.* Sellérieblättrige Gelbwurz.

**ZANTHORHIZA** apiifolia. L'Herit. stirp. i. p. 79. t. 38. Ait. Kew. i. p. 399. Willd. arb. 414. Willd. Sp. Pl. Tom. 1. par. ii. p. 1568. Mich. Fl. Boreal-Am. vol. i. p. 186. Muhl. Cat. ed. 2d, p. 33. Stokes, Bot. Mat. Med. vol. ii. p. 194. Marshall, Arb. Am. 168. Woodhouse, in New York Med. Rep. ix. 291. Juss. Gen. Pl. p. 234. Elliott, Fl. Geo. and Car. vol. i. p. 376. Barton's Cullen, vol. ii. p. 57. Nutt. Gen. Am. Pl. vol. i. p. 207. Dyck. Edin. Disp. p. 504. Thacher's Disp. ed. 3d, p. 386. Coxe's Disp. ed. 3d, p. 669. Pursh, Fl. Am. Sep. vol. i. p. 212. Barton's Collections, 3d ed. par. i. p. 11.

### ZANTHORHIZA.

Gen. Pl. ed. Schreb. 1581.

Nat. Syst. Juss. *Ranunculaceæ*.

Nat. Ord. Lin.

Artific. Syst. Lin. Classis *Pentandria*. Ordo *Polygynia*.

*Cal.* 0. *Petala* 5. *Nectaria* 5-pedicellata. *Caps.* 5. *Monospermæ*.

*Calix* none. Petals five. *Lepanthia* five, pedicellate. *Capsules* five to eight, 1-seeded, semi-bivalve.

**ZANTHORHIZA** apiifolia; frutex humilis tripedalis. Folia alterna impari-pinnata, foliolis ovato-cuneiformibus, inciso-dentatis, terminali trilobo inciso. Flores atroviolacei paniculati terminalis. W.



## SYNONYMA.

ZANTHORHIZA tinctoria. Woodhouse.

ZANTHORHIZA simplicissima. Marshall.

ZANTHORHIZA Marbosia. Bartram.

## PHARM.

ZANTHORHIZÆ apiifoliæ. Cortex et lignum radicis. Cortex caulis.

THIS small shrub is from two to three feet high; and is a native of the southern atlantic states, where it is principally restricted to the mountains. It is abundant on the banks of the Ohio and in the upper districts of Carolina, near the mountains. The root is horizontal, sending off numerous suckers. The stem is simple, the bark smooth, but covered on the young shoots with angular fissures, and the wood is bright yellow. The leaves are triternate, simply or doubly pseudo-pinnate, crowded together at the upper portion of the stem. Leaflets broad-lanceolate, or ovate-lanceolate, acute, doubly serrated, sessile, of a yellow-green colour, smooth above, and slightly pubescent underneath, supported by long petioles swelling at the base into an amplexicaule sheath. Flowers in divided racemes, drooping below the leaves, of a dark purple colour, with obovate, bilobed, deep purple nectaries. Germs superior, flattened, from five to nine in number, crowned by styles which vary from two to eight. Capsules inflated and compressed, one-celled, two-valved, opening at the apex. Seeds oval

and flattened. The period of florescence is April. The specific name *tinctoria* was given to it by the late Professor Woodhouse in allusion to its dying property, that of Marbosia by Bartram in honour of M. de Marbois—but as L'Heritier's name seems most appropriate I have adopted it.

#### MEDICINAL PROPERTIES.

The medical virtues of this shrub are those of a very pure tonic bitter. Both the wood and bark of the root may be used, but only the bark of the stems, according to Dr. Woodhouse. The shrub contains a gum and a resin, both intensely bitter; the resin is more abundant than the gum.

Dr. Woodhouse used the powdered stem and root in the dose of two scruples for an adult, combined with other remedies, in many of those cases in which bitters are recommended. It agrees well with the stomach, and as a strong and pleasant bitter, it may be considered as a useful addition to the *Materia Medica*. It was the opinion of the late Professor Barton, that the *Zanthorhiza* was a more intense bitter than Columbo. He thought the bitterness of the wood of the root was not so great as of the bark. Sulphat of iron does not alter the colour of an infusion of the bark of this root in hot water. Yet its after taste of acrimony or pungency on the palate seems to justify the opinion, that it is a less pure bitter than Columbo—though very nearly allied to it.

**ŒCONOMICAL USES.**

The yellow juice of this plant imparts a drab colour to woollen cloth, and a fine yellow to silk; neither cotton nor linen, however, imbibes any of it. With a proper mordant, it would in all probability be a valuable native dye. The infusion in hot water is very yellow.

The watery extract of the grated roots mixed with alum, and added to Prussian blue, was used by Mr. John Bartram, for colouring plants and the green plumage of birds. This mixture is said to have produced a more lively colour than the mixture of Prussian blue and Gamboge, and stands well in the shade, but acquires a dull olive colour on exposure to heat or a strong light.

**TABLE XLVI.**

Represents a flowering twig of *Zanthorhiza apiifolia*, of its natural size, drawn from a specimen taken from Bartram's Garden, Kingsess.







LOBELIA SPICATA.  
(Blue Cardinal Plant.)

## LOBELIA SIPHILITICA.

### BLUE CARDINAL FLOWER.

Blue Lobelia, or Cardinal Flower.

*French.* Lobelie syphilitique; Cardinale bleue.

*Italien.* Lobelia sifilitica.

*Span.* La siphilitica.

*Germ.* Blaue Kardinals blume, Gemeine Lobelie.

*Engl.* Blue cardinal's flower.

*Dutch.* Pokkige Lobelia.

*Danish.* Kopper-Lobelie.

**LOBELIA** siphilitica. **L.** Hort. Cliff. 426. Mat. Med. 194. Amœn. Academ. iv. p. 527.

Gron. Virg. 134. Kniph. Cent. 8. n. 60. Moris. Hist. ii. p. 466. s. 5. t. 5. f. 55.

Dodart. Mem. 297. Rob. ic. Houttuyn. Lin. Pfl. Syst. x. p. 66. L. Sp. Pl.

1320. Mant. 482. Hort. Kew. iii. 284. Woodville, i. 177. t. 63. Drake's Pict.

Cin. p. 87. Bart. Prod. Fl. Ph. p. 30. Bart. Comp. Fl. Ph. vol. ii. p. 61.

Boerh. i. 250. Chisholm, 25. Lew. Disp. by Dunl. 249. Pearson, J. account

from, in Ann. Med. Lustr. II. i. 271. and Chir. Rev. vii. 161. Barton's Col-

lections, ed. 3d, part i. p. 56. Lew. ii. 73. Monro, iii. 160; Sold. ii. 243. Murr.

i. 514. Stokes, Bot. Mat. Med. i. p. 242. Rush, i. 31. Schoepf, 128. Vog. 108.

Mather, in Phil. Trans. Abr. by Jones, part ii. 160. and by Hutton, vi. 86.

Chapman, Elem. Therap. and Mat. Med. i. p. 272. Mich. Fl. Boreal-Am. vol.

ii. p. 151. Elliot, Fl. Car. and Geor. vol. i. p. 266. Muhl. Cat. ed. 2d, p. 22. Pursh, Fl. Am. Sep. vol. ii. p. 447. Jacq. ic. 3. t. 597. Dyck. Edin. Disp. p. 306. Coxe, Disp. ed. 3d, p. 404. Thacher's Disp. ed. 3d, p. 271. Walt. Fl. Car. p. 218. D. Dodart. Memoirs, &c. p. 297. Nutt. Gen. Am. Pl. ii. p. 77.

**LOBELIA** siphilitica ; erecta, simplex, pistilla ; foliis ovato-lanceolatis subserratis, racemo folioso, calicibus hirsutis, sinubus reflexis. *Willd. and Pursh.*

Erect, simple, a little hairy ; leaves ovate-lanceolate, subserrate, raceme leafy ; calices hirsute, with the divisions reflexed.

#### SYNONYMA.

**RAPUNTIIUM** Americanum ; flore dilutè cœruleo. Tournefort and Boerh.

**RAPUNCULUS** galeatus Virginianus, flore violaceo-majore. Moris.

**RAPUNCULUS** Americanus, flore cœruleo. Dodart.

**LOBELIA** reflexa. Stokes.

**TRACHELIUM** Americanum, flore cœruleo. Rob. ic.

**FAN** tuttipang. Mather, in Phil. Trans.

#### PHARM.

**LOBELIÆ** siphiliticæ. *Radix.*

**QUAL.** lactescens, acris, nauseosa.

**USUS.** diuretica, pellens, purgans, emetica.

#### DESCRIPTIO UBERIOR.

*Caulis* simplex erectus pedalis, angulis pilis rigidulis a foliorum marginibus decurrentibus. *Folia* alterna sessilia latius lanceolata serrata scabriuscula. *Flores*

axillares solitarii brevissime pediculati coerulei. *Calix* serrato-denticulatus; laciniis lanceolatis, sinibus reflexis, germen tegentibus (ut in *Campanulis* Medio, etc.) *Corolla* coerulea angulata, laciniis subæqualibus carina ciliatis, palato 2 gibbositatibus. *Mant.* 482.

WE have already figured and described two species of the genus to which this fine plant belongs; and, as in them, the root of this one is perennial, fibrous, acrid, and nauseous. The stem is erect, angled and simple, hirsute above, destitute of pubescence below, and from one to three feet high. It is sometimes though rarely branched. The leaves are crenulate, larger below than above; those near the root, and the lower portion of the stem, are lanceolate, elliptical, sessile, strongly veined, somewhat shining, and irregularly and finely denticulate on the margin. Those above are lanceolate and also denticulate, veined and smooth. As in the cardinal plant, the leaves gradually diminish in size, particularly in length, from the bottom upwards, giving the plant a pyramidal appearance when in full bloom. The flowers are supported on short bracteated pedicels, arranged on long, leafy, terminal, and sometimes axillary spikes. The flowers are Prussian blue, blended with white on the under side, the buds being tinged with yellow, and the inner side of the laciniæ of the corolla of a darker blue. The calix consists of five hastate, hispid segments, ciliated on the margin, and reflexed at either side. The bracteal leaves, at the base of the pedicels, are likewise ciliated. The filaments are lead-blue, the anthers white, and projecting conspicuously inside of the upper segment of the corolla. The flowers are



apt to fade white, without great care, in drying for the herbarium. This elegant plant displays its flowers in August and September, and is a very common inhabitant of meadows, the margins of rivers and small waters, and the borders of watery thickets.

#### MEDICINAL PROPERTIES.

*Lobelia siphilitica* is a lactescent, acrid, and rank-smelling plant, particularly the root, which alone, seems to be useful for medicinal purposes. It has found its way into the works on *Materia Medica*, by its reputed efficacy in curing siphilis among the Indians of this country. The use of the plant with this view, was long preserved as an important secret among them, until it was purchased by sir William Johnson, who made it known to Europeans, and since then it has been repeatedly tried under every favourable circumstance by physicians of eminence,\* and the result has been, that its reputed antisiphilitic powers are no longer credited. Indeed, it seems probable, that the Indians themselves did not trust in the cure of true siphilis to this herb, but used, in conjunction with it, the bark of Wild cherry, (*Prunus Virginiana*) the root of May-apple, (*Podophyl-*

\* Desbois de Rochefort and others have administered this root in Siphilis without the least success: and Pearson, in his work on the effects of various articles in the cure of siphilis, corroborates the worthlessness of the herb in that disease. I have myself used it in more than five or six cases, without perceiving the slightest benefit.

lum peltatum) and many other plants.\* They, in general, had recourse to the advice of Europeans, when attacked with this disease, not reposing entire confidence in their own inefficient plan of treatment. Dr. Barton was of opinion that the plant had cured gonorrhœa, and speaks confidently on this point, believing that it operated beneficially in this complaint, by the diuretic virtues, which it certainly possesses. Dr. Chapman† mentions that some of the western physicians resort to it for the cure of dropsy with success; but does not himself speak of any personal experience on this point. It appears to act frequently as a sudorific, a purgative, and an emetic.

The root is to be given in decoction in the proportion of half an ounce to one or two pounds of water; and also in extract, of which from five to twenty grains made into pills, may be given. It is necessary to omit the medicine when purging or vomiting is induced. The directions given for its use, with a view to cure siphilis, are as follow: “a decoction is made of a handful of the roots in three measures of water. Of this, half a measure is taken in the morning fasting, and repeated in the evening; and the dose is gradually increased till its purgative effects become too violent, when the decoction is to be intermitted for a day or two, and then renewed till a perfect cure is effected. During the use of this medicine, a proper regimen is to be enjoined, and the ulcers are also to be frequently washed with the de-

\* Barton's Collections.

† Elem. Therap. and Mat. Med.

coction, or if deep and foul, to be sprinkled with the powder of the inner bark of the New Jersey tea-tree, (*Ceanothus Americanus.*)”\* This plan is said to cure the disease in a very short time; but we have already given sufficient reasons for want of confidence in it.

## TABLE XLVII.

Fig. 1. Represents the upper portion of *Lobelia siphilitica*, in flower.

2. An outline of a leaf near the bottom.
3. A flower separated, with the leaf always appended to the peduncle.
4. The corolla, cut open.
5. The calix, with the column of stamens and pistil.
6. The pistil and germ.

(All the size of nature.)

\* Woodville, Med. Bot.







PHYTOLACCA DEFLEXA.

(Pokew.)

Tanner & Van der Horst, N. Y. & C. St.

## PHYTOLACCA DECANDRA.

### POKE.

Pigeon-berries. Garget. Poke-weed. Cocum. Jalap Cancer-root. Skoke, or Coakum.  
American-Nightshade.

*Germ.* Gemeine Rermesbeere. Die Americanische Scharlachbere oder Rermesbeere;  
Americanischer Nachtschatten; Virginische Purgaze.

*Dutch.* Tienmannige lakplant.

*Engl.* The branching Phytolacca or Virginian Poke. The mountain Calalæ or  
Pök-weed.

*French.* Morelle à grappes; Grand morelle des Indes; Vermillion plante; Herbe de la  
laque; Mechoacan du Canada; Rasin d'Amerique.

*Italian.* Pianta lacca.

*Span.* Hierba carmin.

*PHYTOLACCA decandra.* L. Hort. Cliff. 177. Hort. Ups. 117. Mat. Med. 118. Gron.  
Virg. 161. Mill. Illus. Reg. Bot. Blackw. t. 515. Du Roi. Harbk. ii. p. 7.  
Hal. Helv. n. 1007. Dill. elth. 318. t. 339. f. 309. Mill. Dict. n. 1. Pluk. Alm.  
353. t. 225. f. 3. Houttuyn. Lin. Pfl. Syst. vi. p. 693. Bart. Collections, 3d  
ed. par. ii. p. 27. Bart. Prod. Fl. Ph. 52. Bart. Comp. Fl. Ph. i. p. 219.  
Pursh, Fl. Am. Sep. vol. i. p. 324. Mich. Fl. Boreal-Am. vol. i. p. 278. Drake's  
Pict. Cin. p. 85. Stokes, Bot. Mat. Med. vol. ii. p. 566. Bry. 126. L. Sp.  
Pl. 631. Hort. Kew. ii. 122. Bot. Mag. t. 931. Cutler, 447. Dill. Hort. 318.

t. 239. f. 309. Boerh. ii. 70. Sloane, Cat. 84. Raii. Hist. 662. Park. theatr. 347. Munt. Phyt. 23. t. 112. Dale, 168. 173. Schoepf, 71. Vog. 114. Murr. iv. 335. Geoffr. suite, i. 403. Lew. Disp. by Duncan, 345. Chom. 787. Rush, i. 259. Clayt. in Ph. Tran. abr. by Hutt. viii. 331. Amœn. Academ. vol. iv. p. 524. Muhl. Cat. ed. 2d, p. 47. Puihn. Mat. Med. Venenar. p. 93. Nutt. Gen. Am. Pl. vol. i. p. 293. Coxe's Disp. ed. 3d, p. 477. Edin. Disp. by Dyck. p. 337. Big. Med. Bot. vol. i. p. 39. Thach. Disp. ed. 3d, p. 312.

## PHYTOLACCA.

Gen. Pl. 800.

Nat. Syst. Juss. *Polygoneæ*.

Artific. Syst. Lin. Classis *Decandria*. Ordo *Decagynia*.

*Cal.* 0. *Pet.* 5-calycina. Bacca supera, 10-locularis, 10-sperma.

*Calix* 5-leaved, petaloid. Berry superior, 10-celled, 10-seeded.

PHYTOLACCA decandra; foliis ovatis utrinque acutis, floribus decagynis.

*Willd.* and *Pursh.*

Leaves ovate, acute at each end; flowers decandrous decagynous.

## SYNONYMA.

PHYTOLACCA Americana; majori fructu. Clayt. Chom. Boerh.

PHYTOLACCÆ vulgaris fructus et flores. Dill.

SOLANUM racemosum Americanum. Raii, Sloane, Pluk.

SOLANUM magnum Virginianum rubrum. Park.

BLITUM Americanum. Munt.

## PHARM.

PHYTOLACCÆ decandræ. Herba recens, succus, radix, baccaë.

THE POKE is a well-known, large, rank plant, growing abundantly in every part of the United States, in wastes, rubbish, and near fences and road sides. It grows to the height of six or eight feet, and sometimes attains even a greater stature. The root is very large, often five or six inches in diameter, and consists of a solid, but soft, fleshy, fibrous mass of whitish colour. It is branched in one or two large portions; when dried, it becomes light and spongy. The stem is thick, round, much branched and very glabrous; the branches are large, and spread in various directions, giving the plant a breadth of four or five feet. The leaves are ovate, narrowed at each end, acute, strongly veined on the under surface, and very smooth on both sides. They are frequently tinged near the base and along the costa with purple, and when old are quite reddish. Those situated on the lower portions of the stem and branches are very large, often nine or ten inches in length; the upper are considerably smaller; and all of them are supported on short foot-stalks. The stems are at first green, but become afterwards of a fine purple hue. The flowers are small, numerous, and borne on long racemes, sometimes erect, and often drooping, as is the case with the berries. The corolla consists of five small, ovate, concave petals, folding inwards; there is no calix. Stamens, ten in number, shorter



than the petals, with double white anthers. The pistils are ten, consisting of a flattened, globose, ten-furrowed green germ, and ten short recurved styles. The berries are deep blackish purple, and very shining, crowned with the persistent styles. They are full of a fine purplish red juice. The pedicels of the flowers are variously coloured, being sometimes white, green and yellow, and often red ; and when the berries are quite ripe, are of a fine carmine hue. This plant commences flowering in July, and sometimes continues in bloom during the whole summer. It is common to find flowers, and the green and ripe berries for a length of time, on the same stalk. It is a native of the South of Europe, some parts of Africa, and North America.

#### CHEMICAL ANALYSIS.

We are indebted to M. Braconnot\* for an excellent chemical analysis of this vegetable. According to this chemist, the Poke contains an unusual quantity of vegetable alkali in neutral combination with a peculiar acid allied to the malic, but in his opinion, a mean between this and the oxalic acids. In his experiments with the colouring matter of the berries, M. Braconnot discovered that a yellow liquor, formed by the combination of the purple juice of the ripe berries and lime water, was a very delicate test of the presence of an acid.

\* Annales de Chimie, vol. lxxii.

A few drops of lime water added to the juice produces a change to a yellow colour; the purple is again reproduced by a similar portion of acid. M. Braconnot's comparative experiments with respect to the sensibility of litmus paper and this yellow liquor, resulted in the fact, that one-fourth the number of drops of weak acid were sufficient to restore the pristine purple of the yellow compound, which were necessary to redden litmus paper. The yellow liquor, however, must be used as soon as made, as it changes in a short time. For a more detailed account of the chemical analysis, I refer to the memoir of M. Braconnot, already quoted, and to the dissertation of Dr. Shultz.

#### ECONOMICAL USES.

The turiones of this plant are cut near the ground when about three or four inches high, and brought in great abundance to the Philadelphia market, as a table vegetable. These young shoots, when they have had a rapid growth, and the acrid juices of the plant have not become evolved by air and light, are innocent; and, by some persons esteemed delicious. When well boiled and dressed in the same manner as asparagus, they are easily digested. Yet this practice is not without danger; and I have known an instance in a family in Lancaster, in which very violent narcotic effects were induced in several persons who had eaten of the young

shoots of Poke. The probability is, that in the instance alluded to, the shoots were too old, and had acquired the proper active juice of the plant.

It is common to make a red ink from Poke-berry juice, with the addition of alum. The colour, however, is evanescent, and the alum does not appear to be a sufficient mordant. We are indebted to Dr. Adam Seybert, the author of American Statistics, for a discovery of the means of fixing the colour of these berries. Yet, I am sorry to be unable to refer to his experiments, which were only published in a newspaper, not known to me; and the author being absent, I cannot obtain any information on the subject.

#### MEDICINAL PROPERTIES.

Many medicinal virtues have been attributed to Poke: but we shall select those only which are prominent and authenticated. The tincture of the ripe berries in brandy, seems to have acquired a well founded reputation as a remedy for chronic and siphilitic rheumatism, and for allaying syphyloid pains; and its effects have been compared to those of the volatile tincture of guaiacum. It is confidently recommended in cases which indicate the use of that article, as a safe and efficacious remedy, under judicious management. The late Professor Barton believed it to be a more valuable medi-

cine than the guaiacum—and recommended, as did Dr. Shultz,\* the simultaneous exhibition of calomel and other preparations of mercury with it. He says he has “employed the ripe juice of the berries, inspissated to the state of an extract, in some cases of scrophula;” but does not state the result of his trials. The tincture of Poke is much used in this city by some highly respectable practitioners, in rheumatism, and with undiminished confidence in its efficacy.

Poke has had no inconsiderable reputation as a remedy for cancer; but, notwithstanding some high names were enlisted in support of the accounts of its efficacy, it has deservedly lost its character as a cancer-remedy. It is most likely that it was found serviceable in ill-conditioned, sluggish ulcers, which are too frequently mistaken for real cancer, and thus give undue reputation to the curative article employed. That Poke in extract, and in form of ointment, has done good in obstinate cutaneous affections, there seems no fair reason to doubt. It is true the accounts of the efficacy of these preparations, have been greatly exaggerated; but still there remains a sufficient portion of respectable testimony, to accredit the claims of the article as a good local stimulating remedy in such affections. That it has cured obstinate cases of *tinia capitis*, is not probable; for it is not reasonable to suppose that this very pertinacious disease of the scalp, would yield to an article of so little activity in local applications, as either the ointment or extract of Poke.

\* See Inaugural Diss. Univer. Penn.



Some of the physicians of the eastern states, repose great confidence in the pulverised root of Poke, as an emetic. They inform us that in doses of ten or twenty grains, it operates as a certain vomit. It is certain that Poke root produces emesis and catharsis violently, as many active semi-narcotic plants do: and it is not to be doubted that in some instances, convulsions and narcotic symptoms have supervened to the violent vomiting and purging, produced by the internal use of *Phytolacca*. Indeed, the convulsions then induced have been long noticed, and Puihn particularly mentions this effect, as well as the drastic purgative power of the root. The slowness of the emetic operation of Poke, together with the ambiguous narcotic symptoms accompanying it, will, in all likelihood, prevent any general recourse to the article as an emetic.

It is to be regretted that Poke is mentioned in Thacher's Dispensatory, on the authority of some physicians of Savannah, to be adequate to the cure of siphilis *without the use of mercury*, thus adding another ideal virtue to a plant already extolled beyond its medicinal worth. Unfortunately the preposterous idea of curing this virulent disease by means of *herbs alone*, (sarsaparilla, for instance) has found some few proselytes in this country: but surely the idea of substituting Poke for mercury, ought not to have obtained the countenance of the respectable compiler of the American New Dispensatory.

The extract of Poke is much used by country practitioners, as a discutient in indolent tumours: and it is said they are in the habit of in-

fusing the root in wine, in the proportion of an ounce of the former to a pint of wine, and using it to produce vomiting, in the dose of two spoonfuls. A strong infusion of the leaves taken internally, has also been recommended in hemorrhoids. On its efficacy here, however, I cannot help suspecting, there is but little reason to rely. The Poke ointment is made by boiling the fresh leaves in hogs lard and bees wax, and straining while hot; or it may be made by powdering the dried leaves, and mixing the powder with lard or simple cerate. The tincture may either be made by infusing the ripe berries in brandy or wine, or by dissolving the extract of the leaves in their green or dry state, in spirit.

An extract may be made by slowly evaporating the expressed juice of the recent leaves collected in July, to a proper consistence.

The ointment and extract produce a sense of heat and smarting, when first applied.

The roots should be collected for medical use in the autumn, and sliced transversely; then dried and kept in covered bottles. As they lose their activity in time, a fresh supply should be annually collected. The leaves ought to be gathered when the berries are ripe, and used as already directed.

## TABLE XLVIII.

- Fig. 1. Is a flowering twig of *Phytolacca decandra*, with a bunch of green berries, taken from the upper portion of a plant.
2. A cluster of ripe berries, with a portion of the coloured stem, taken from the lower part of the same plant.

(Both the size of nature.)

3. The germ, stamens and pistils, magnified.







From nature by W. Bartol

*Linaria mobilis*

(Blue Blended Star)

## LIATRIS *DUBIA*.

### BLUE-BLAZING STAR.

Rattle-snake's master, Button snake-root.

### LIATRIS.

Gen. pl. 1263.

*Recept.* nudum. *Pappus* plumosus, coloratus. *Cal.* oblongus, imbricatus.

*Nat. Syst. Juss.* *Corymbifera*.

*Artific. Syst. Lin.* Classis *Syngenesia*. Ordo *Aqualis*.

**LIATRIS** *dubia*; radix tuberosa, radiculis comosis. Caulis rectus, lineatus, hispido-pubescent. Foliis linearibus lævibus, punctatis, imis multoties majoribus; superioribus, basi ciliatis. Spica longa floribus pedunculatis. Pedunculi pubescenti uniflori elongati, foliolis aliquot instructis. Calix oblongus vel sub-globosus; squamis lanceolatis, subacutis, erectis, verrucoso-punctatis, imis ciliatis. Corollæ tubulosæ, 5-fidæ; laciniis lanceolatis. Semina oblonga, angulata, basin versus attenuata. **B.**

THIS plant is one of a genus nearly all the species of which vary considerably, particularly in those marks usually supposed charac-

teristic, as the sessile or pedicellated flowers. After a very careful examination of the specimen from which the figure was drawn, by the descriptions of Pursh, Michaux, and Willdenow, together with a close scrutiny of all the specimens of the genus in the Muhlenbergian Herbarium, I cannot, to my own satisfaction, refer the plant to any of the named species. Yet it is most probably not remote from the *spheroidea*, *scariosa*, or *graminifolia*. In this hesitation I have thought it best to add the doubtful mark, and let the figure and description I have given, establish its proper place among the described species.

The root is tuberous, and sends off a great number of long, slender, whitish, dry, fibrous portions. The stem is erect, in the specimen figured, three and a half feet high, striated with whitish lines, covered with a sparse semi-hispid pubescence. The lower leaves are longer, and much wider than the upper, somewhat arcuate, very much dotted or pitted, glabrous, entire, sessile, and not scabrous on the margin. The costa is prominent, yellowish. The upper leaves are much smaller and quite linear, ciliated for the most part at the base, but some of them ciliated two-thirds of their length. The spike is very long, and leafy, the flowers being situated on long, leafy, pubescent pedicels. The calix is somewhat cylindrical or sub-globose, the scales lanceolate, subacute and erect, slightly spreading at the bottom where the lowermost scales are ciliated. The corolla is tubulous and divided into five lanceolate, acute segments; and, together with the long, exserted anthers, are of a most brilliant and delicate violet colour.



All the leaves, peduncles, and calix scales are deeply pitted or dotted, and in the dried specimen, have a verrucose appearance. The plant flowers in the last of September.

#### MEDICINAL PROPERTIES.

All the tuberous rooted species of the genus *Liatris* are active plants, and seem to be uniformly diuretic. The *Liatris macrostachya* is already noticed in Dr. Barton's Collections, and Schoepf describes the *L. scariosa*, by the name of Rough-root lobelia, as an acrid, sub-bitter plant, possessed of diuretic virtues, and as useful in Gonorrhœa. He states that the root has been prescribed with this view in weak decoctions, to considerable extent. Pursh says the same plant, and *L. squarrosa*, are known among the inhabitants of Virginia, Kentucky, and Carolina, by the name of "Rattle Snake's Master;" and tells us, that when bitten by that animal, they bruise the bulbs of these plants, and apply them to the wounds, while at the same time they make a decoction of them in milk, which is taken inwardly, in the same manner as *Prenanthes serpentaria*. I have also two specimens of *Liatris* from Mr. Collins, the one received from Mr. Lyon, and collected by him in Ohio and Tennessee, under the name of Rattle-snake plant, the other collected by Mr. Collins himself, in Cove, or North Mountain, in the western part of Pennsylvania, last summer, where



he learned the plant was used for curing the bite of the Rattle-snake. These two specimens do not materially differ from the plant here figured, which was received by me, under the same name of "Rattle-snake root." They are not improbably varieties of the *L. scariosa*, *graminifolia* or *spheroidea*; but neither of them agrees well with the description of *scariosa*.\* For the present, these remarks are thrown together principally with a view to elicit information respecting the medicinal species of this beautiful genus of plants; and as the plate here given, is a supernumerary one in this number, the above imperfect account will, it is hoped, be excused.

\* The following remarks are from Plukenet, accompanying his Fig. of *L. scariosa*:  
Fig. 4. Tab. 177.

*Eupatoria adfinis Americana bulbosa, floribus scariosa, calicibus contectis.*

*Huic in capitulis saltem persimilis exhibitum, in Hist. III. exic. Recch. sub nomine Xandro, ut bidesis, pag. 196. Planta pappescens non lactescens Virginiana. D. Banister.*

TABLE XLIX.

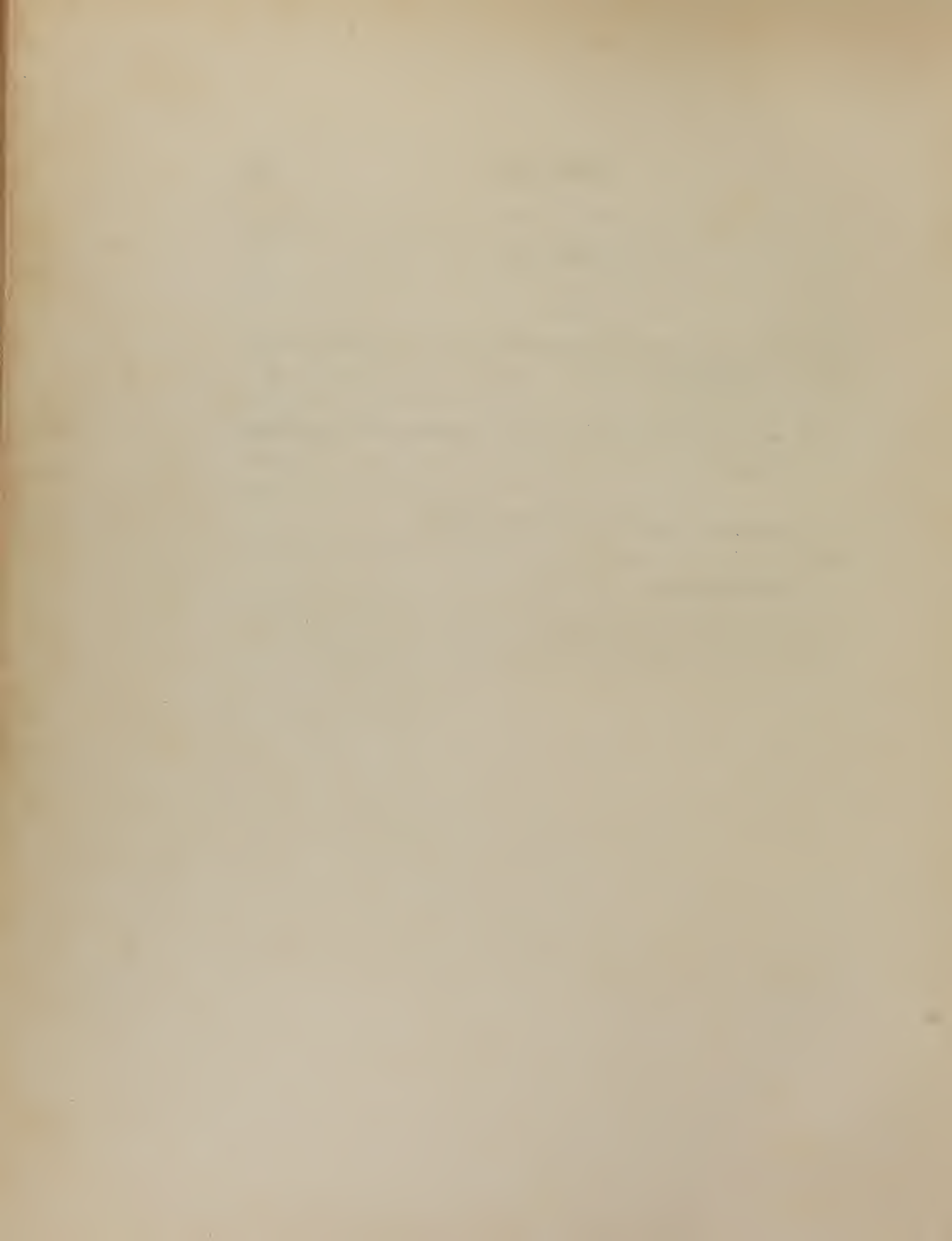
Fig. 1. Represents a portion of *Liatris dubia*, near the root, of the natural size.

2. An upper portion of the same specimen, also the size of nature.

3. A flower separated, very little magnified.

4. The stamens.

5. The same, greatly enlarged.









Drawn from Nature by W.P. Bartlett.

*OENOTHERA UNIFLORA.*

(One-flowered Evening Primrose - Root.)

## OROBANCHE UNIFLORA.

### ONE-FLOWERED CANCER-ROOT.

*Germ.* Einblumige Sommerwurz.

**OROBANCHE** uniflora. L. Sp. Pl. 882. Walt. Car. 166. Rai. Supp. 595. Gron. Virg. 70. Pluk. Mant. 89. t. 348. f. 3. Mitch. 25. Houttuyn. Lin. Pfl. Syst. 8. p. 152. Mich. Fl. Boreal-Am. vol. ii. p. 26. Muhl. Cat. ed. 2d, 61. Pursh, Fl. Am. Sep. vol. ii. p. 431. Willd. Sp. Pl. vol. iii. par. 1. p. 352. Bart. Comp. Fl. Ph. vol. 2d, addenda. Bart. Prod. Fl. Ph. p. 66.

Genus *Orobanche* (see *Orobanche Virginiana*, p. 25.)

**OROBANCHE** uniflora; scapis nudis unifloris calice ebracteato, corolla recurvata.

*Willd. and Pursh.*

Scapes naked, one-flowered ; calix without bracts, corolla recurved.

### SYNONYMA.

**OROBANCHE** aut Helleborine affinis Marilandica, &c. Raii.

**DENTARIA** s. Aublato cordi affinis, &c. Gron.

**GENTIANA** minor aurea, &c. Pluk.

**APHYLLON**. Mitch.

### PHARM.

**OROBANCHE** unifloræ. *Radix.*

ONE species of this genus has already been figured and described in this work, under the name of Cancer-root; and a second is now noticed for reasons presently to be given.

This little plant, like its congener just alluded to, is a leafless parasite on the roots of trees and shrubs. It is above a span high, several scapes proceeding from the same root. The root is gibbous or irregularly knobby, and sheathing the scapes at their origin from it. It is of a yellowish colour. The scapes are tortuous and round, about the thickness of bobbin, and finely pubescent every where, but especially towards the upper part; and of a delicate yellowish-white hue, almost imperceptibly tinged with pink near the flower. The flowers are secund, or leaning towards one side, snow-white, consisting of a recurved monopetalous corolla, and a five-leaved ebracteate calix, also white, both finely and densely pubescent. The corolla is divided into ovate, obtuse segments, on the lower of which, two yellow diverging nectaries are perceptible, adding a little relief to the white flower. The filaments of the stamens are white, and the anthers yellowish. The germ is ovate, glabrous, and of a tan-colour. This singular little plant delights in very shady situations in rich woods, and has but a very slight attachment by its root, to the substance on which it grows; it is in flower about the beginning or middle of May, and soon fades when culled. It is, when somewhat advanced, of a yellowish hue, but I have always found the plant in its fresh state, of the colour described above. Pursh mentions that it is but two or three inches high, of a tan-colour, and the flowers pale-purple. This is much smaller than

I have been accustomed to meet with it (and in this neighbourhood it is far from being rare) and I have never seen specimens having purple flowers. It is likely the one described by Pursh, is a variety. It must be noticed, however, that Gronovius, Willdenow and Plukenet, describes the flowers as pale blue.\* It is possible, therefore, that the plant growing in this vicinity, and which I have figured, may be a white variety of the blue-flowered species. Which is the type of the species I cannot undertake to decide.

#### MEDICINAL PROPERTIES.

I have discovered, since the publication of Nos. 5 and 6, in which *Orobanche Virginiana* is described, that the present species is collected with the other, and used with it under the name of Cancer-root. My enquiries have satisfied me, that those who use the Cancer-root already described, attribute equal power to the present species. I have therefore, given a figure of the plant in an additional plate, more with a view to direct attention to it, than in the belief, that it has yet any undisputed claim to be ranked among medicines. Yet, I am inclined to suspect most of the species of this genus to be possessed of active properties.

\* *Orobanche uniflora*—*Vagina spathacea*, *Flos pallide cœruleus*, *cernuus*. Sp. Pl.



## TABLE I.

Fig. 1. *Orobanche uniflora*, in flower.

2. The calix, with the germ and style.

3. The germ and style, separated.

(All the size of nature.)

THE END.

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*The synonyms are in Italics.*

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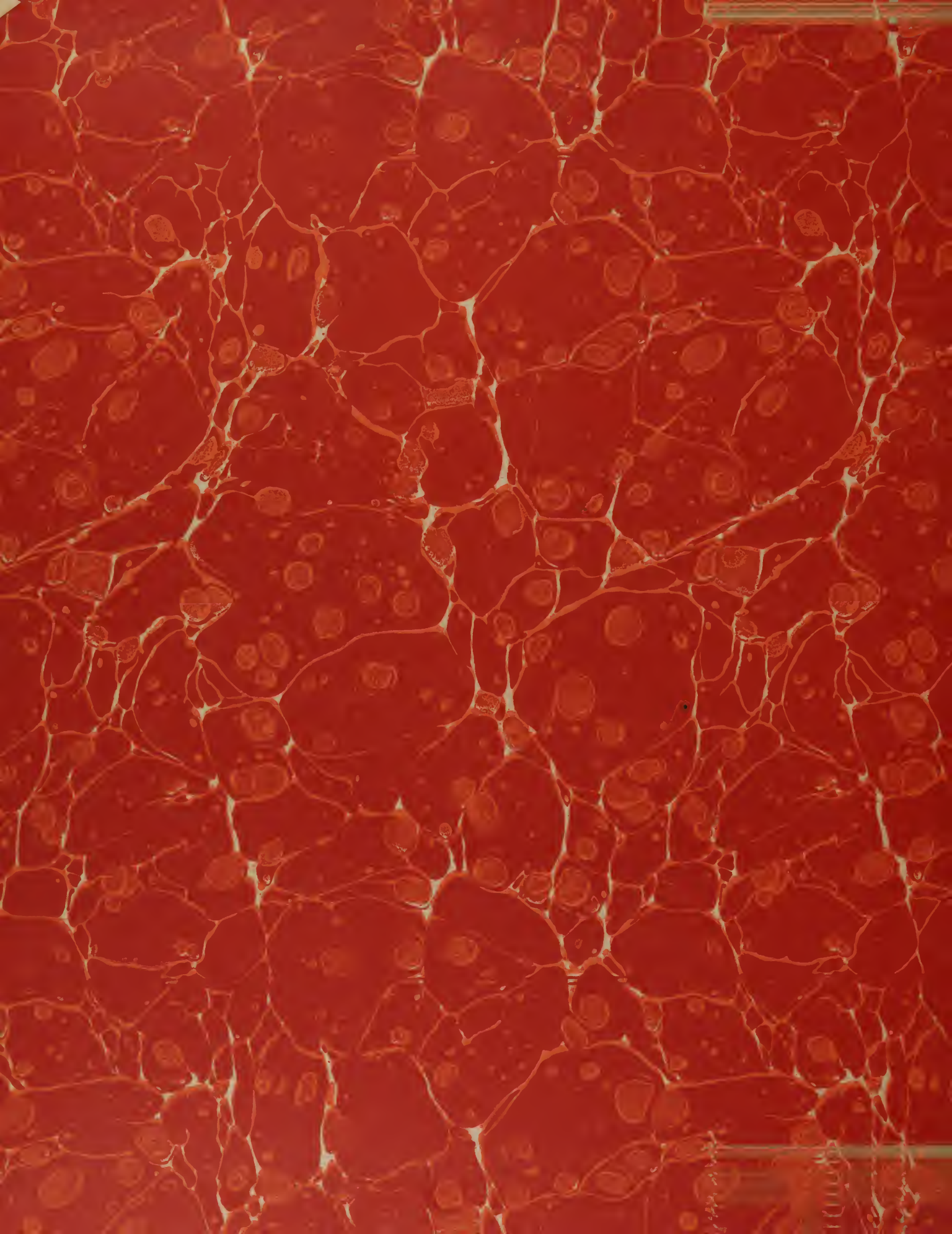
IN consequence of a hasty reading of some of the proof sheets of Numbers 1 and 2, and a neglect to see revises till correct, a number of the errors of the first proof have been left standing, which were not detected until more than half the impression was worked off. Most of them, however, have been noticed on the covers of the numbers, and the Subscribers are requested to correct them before the covers are thrown away, in binding the volume.

In No. 3, page 185, line 4, from the top, for *perfoliatum*, read *perforatum*.

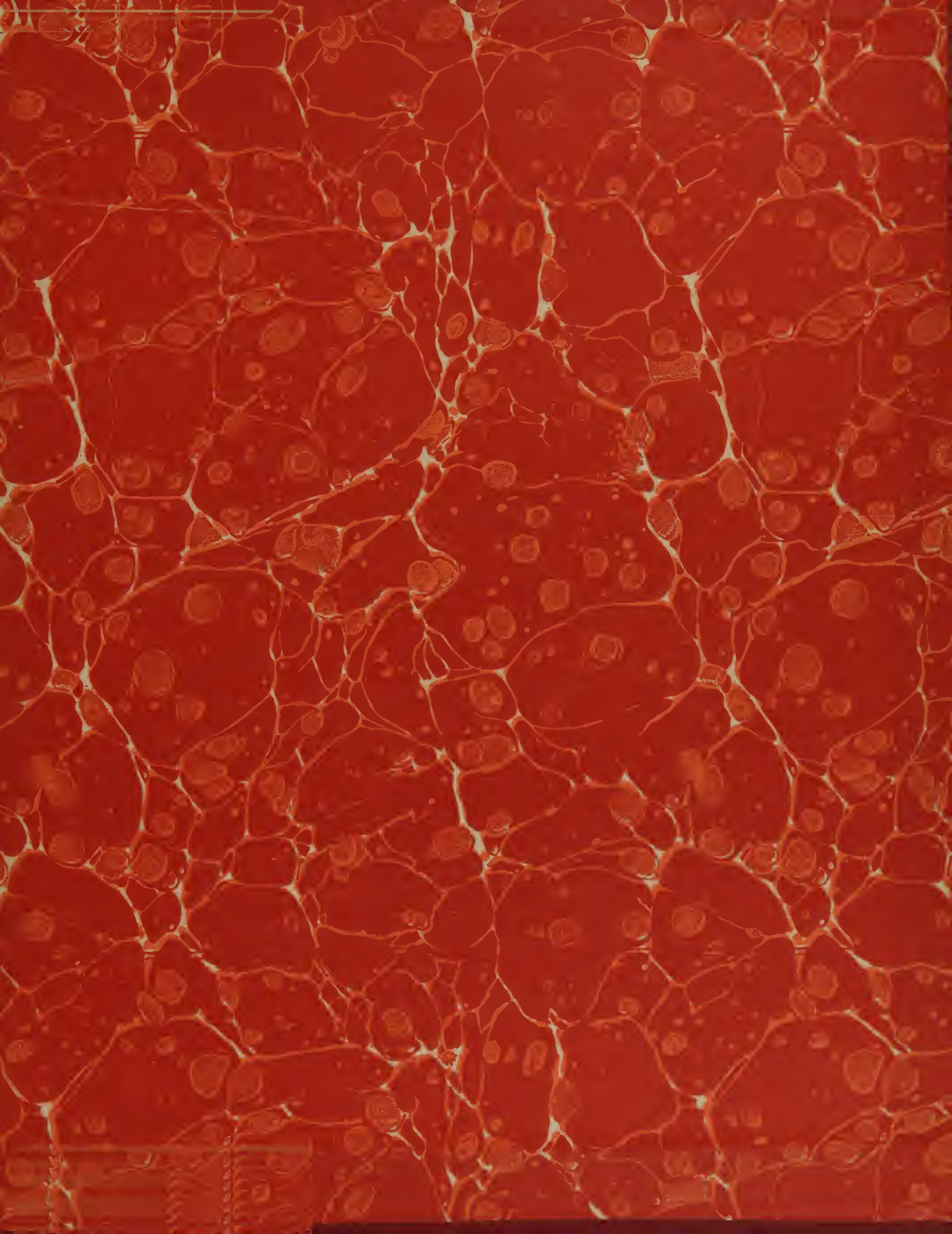












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